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Volume 3

EASTERN GULF OF MEXICO MARINE HABITAT STUDY

Prepared for

U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

January 1979

Prepared Under
Contract AA551-CT8-22

Woodward-Clyde Consultants



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Volume 3

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VOLUME 3
OPERATION REPORTS

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1.0 INTRODUCTION

The Bureau of Land Management determined that geophysical, bathymetric and ground truth surveys were necessary in 49 of the tracts proposed for Lease Sale 65 in order to identify areas in which the lithotope favors the accumulation of critical biota. The 49 selected tracts are grouped into 10 map areas listed in Table 1-1.

The geophysical and bathymetric survey pattern for each block was designed to supplement the data which had been previously collected by the U.S. Geological Survey for the Geological Hazards Survey. Data from the following geophysical systems was collected along each of the survey lines.

- Precision depth sounder with narrow-beam transducer

- Dual side scan sonar

- High-resolution sub-bottom profiler utilizing a tuned transducer (3.5 to 12 kHz)

- High-resolution seismic sub-bottom profiler, using a mechanical or electrical-mechanical acoustic energy source.

The second phase of this study involved identification of existing marine habitats by means of a ground truth survey. The ground truth survey was conducted along transects which were selected by BLM scientists, based upon the results of the previous geophysical and bathymetric surveys. During the ground truth surveys data were collected from the following systems:

- Towed underwater closed circuit television system, with a video recorder and monitor

- Underwater 35 mm still camera system with strobe unit

- Depth sounder

The final report is presented in three volumes. Volume 1 is the technical report; Volume 2 contains the maps and geologic cross sections produced for each of the 10 study areas; Volume 3 is the Operation Reports. The Operation Reports contain operations and instrumentation logs and is intended for use only by those scientists who will be utilizing the original field data.

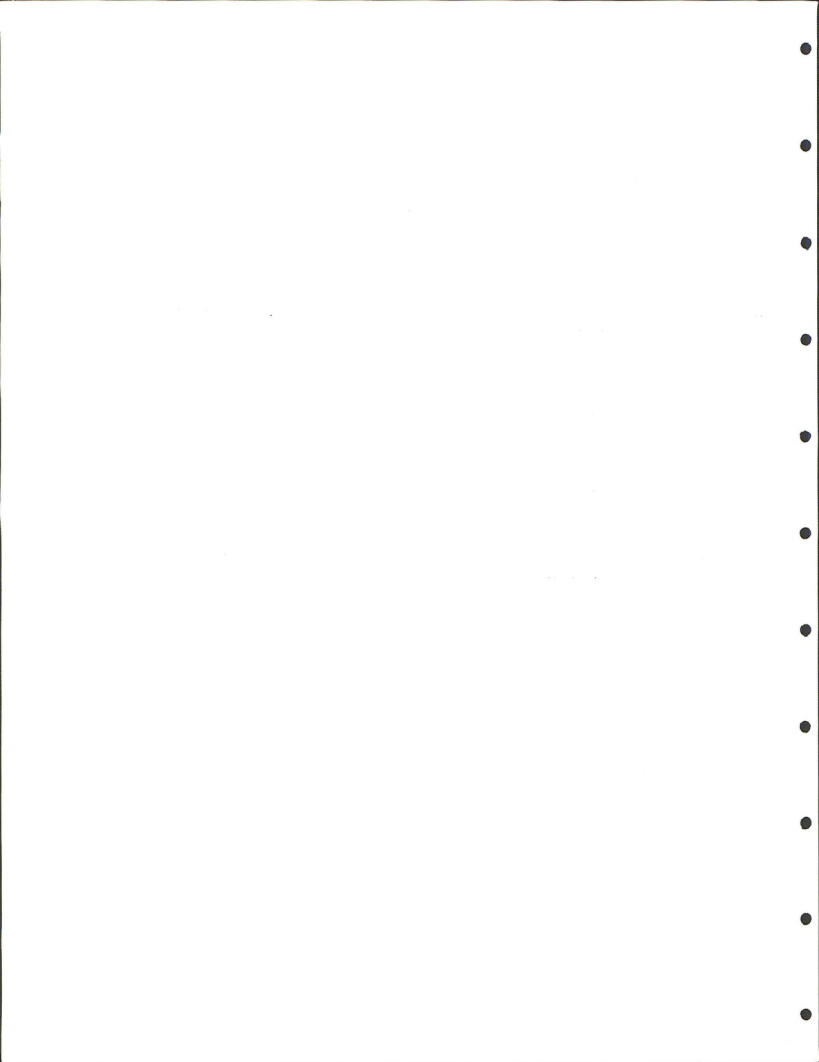
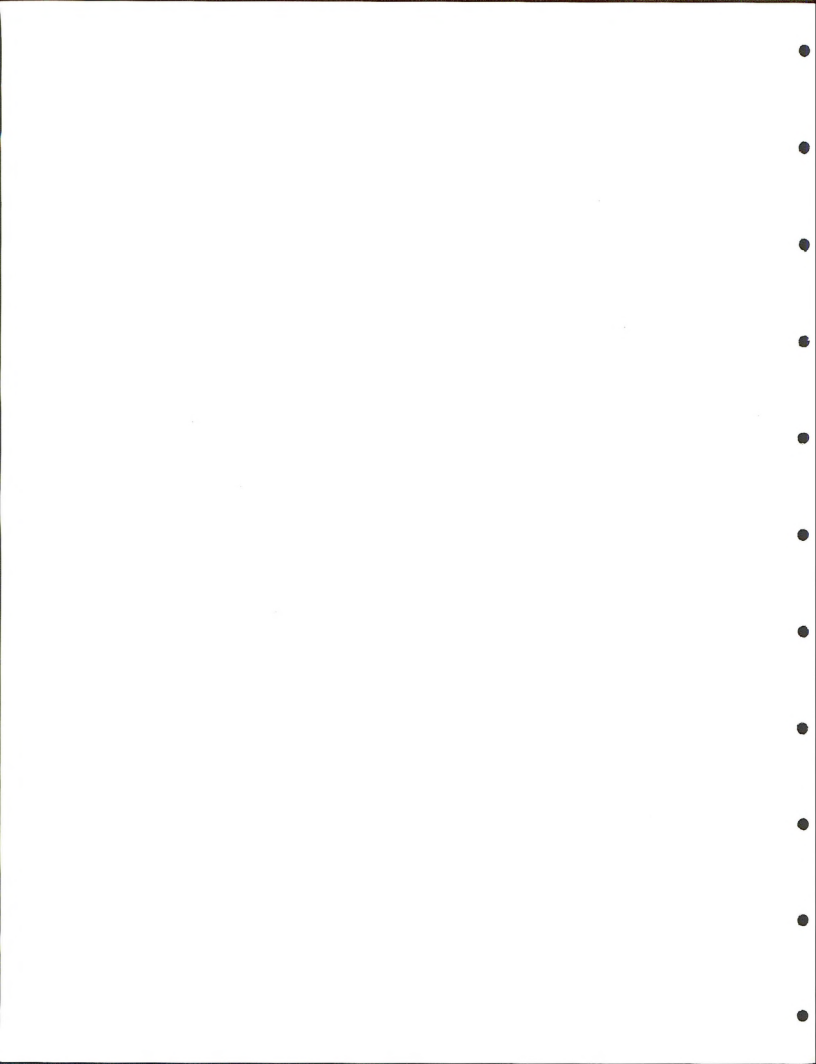


TABLE 1-1
EASTERN GULF OF MEXICO
MARINE HABITAT STUDY
SURVEY AREAS

<u>NUMBER</u>	<u>AREA</u>	<u>BLOCK NUMBERS</u>
1	Pensacola (NH 16-5) Destin Dome (NH 16-8)	884, 928, 972 4
2	Destin Dome (NH 16-8)	313, 314, 357, 358
3	Destin Dome (NH 16-8)	529, 573, 574, 618, 661, 662
4	Destin Dome (NH 16-8)	473, 474, 518, 519, 562, 563
5	Tarpon Springs (NH 17-10)	233, 234, 277, 278, 279
6	The Elbow (NG 16-3)	567, 609, 696, 697
7	Saint Petersburg (NG 17-1)	661, 662, 705, 706
8	Saint Petersburg (NG 17-1)	753, 754, 797, 798
9	Charlotte Harbor (NG 17-4)	143, 144, 145, 187, 188, 231
10	Charlotte Harbor (NG 17-4)	583, 584, 627, 628, 671, 672, 715, 716

NOTE: Blocks 715 and 716 of Area 10, Charlotte Harbor are not included in the 49 blocks to be surveyed under this contract. However, interpretation of data from these blocks is presented because they are included in Lease Sale 65 and are contiguous with the remaining blocks in Area 10.



2.0 PROJECT MANAGER'S REPORT

2.1 Summary of Field Operations

The field operations were divided into two cruises; Cruise I, Geophysical Survey; and Cruise II, Ground Truth Survey. This section provides a brief review of the field operations and a description of the equipment utilized in the surveys. Further details of the field operations are given in the Chief Scientist's Logs, Daily Operations Logs, and Instrumentation Logs. These reports are presented in Sections 3 and 4.

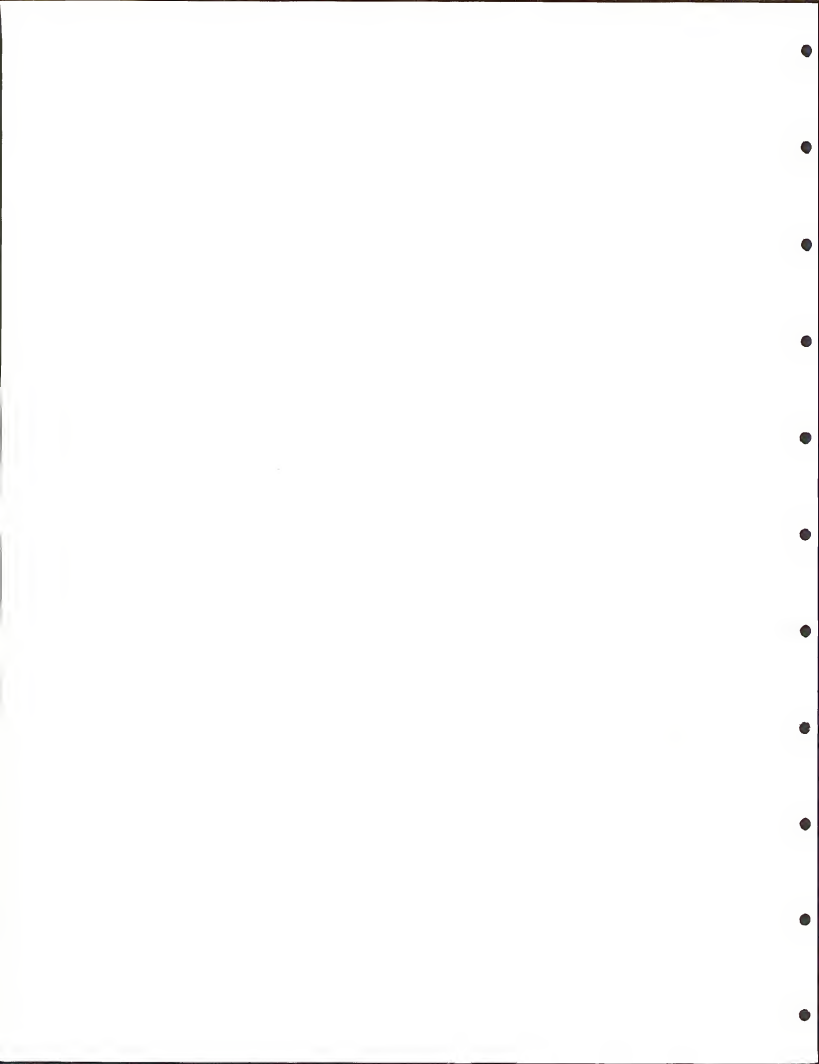
Field operations for the geophysical cruise began with the mobilization of the equipment aboard the survey vessel, M/V Sea Transporter, in Port Arthur, Texas, on 10 July 1978. Mobilization was completed and the boat departed Port Arthur on 13 July and arrived at the first survey area, offshore Pensacola, on 15 July. Survey operations continued on a 24-hour-per-day basis through 14 August 1978. The geophysical cruise was demobilized in St. Petersburg, Florida on 15 August. Details of the operation are presented in Section 3.

The geophysical survey program covered 49 blocks which have been proposed for lease in OCS Lease Sale 65. The 49 blocks which have been surveyed were selected by the BLM. These blocks are grouped into 10 survey areas. For each block the primary survey lines were run at a spacing of 0.8 km with cross lines at 2.4 km intervals. The survey lines equally interspace the existing U.S. Geological Survey Hazard Data. In each block a total of 38.6 km of survey data were collected. The survey vessel utilized for this study was the M/V Sea Transporter, a 40.5 m converted U.S. Navy YF. Further specifications of the Sea Transporter are given in Volume 1.

The geophysical operations included simultaneous data collection from the following systems along each survey line.

Decca Hi-Fix Navigation System with Autocarta Plotting System

EDO Model 4034CM Precision Survey Depth Recorder or Raytheon Model DE719B Precision Depth Recorder



Klein Model 530 Side Scan Sonar/3.5 kHz Sub-Bottom Profiler

EG&G UNIBOOM System

The geophysical equipment is described in Section 3 and Appendix A of Volume 1.

The Ground Truth Survey was designed to provide a permanent videotape and underwater camera record of the marine habitat in selected areas of the 49 blocks covered by the geophysical survey. Unlike the geophysical survey which covered all of the blocks, there was a fixed amount of time available for the ground truth survey; therefore, prior to sailing on Cruise II a firm schedule was prepared to determine the order of the areas to be studied and the length of time to be utilized at each area.

The preliminary results of the geophysical survey were reviewed at a meeting in St. Petersburg on August 14 and 15 by personnel from the BLM, Woodward-Clyde Consultants and TerEco, the biological consultants. Based on this review, 20 TV and underwater camera transects were laid out for the ground truth survey. Three additional transects were chosen at a later time by the Chief Scientist of Cruise II in order to further delineate side scan sonar targets in Area 3.

The locations selected for the ground truth survey were almost exclusively hard bottom areas or areas that were suspected of having a hard bottom. As such, they represent anomalous areas in considering the overall distribution of bottom sediment characteristics on the Florida Shelf. The hard bottom areas are of particular interest because they provide a suitable substratum for the attachment of benthic epifauna and attract large numbers of demersal fishes.

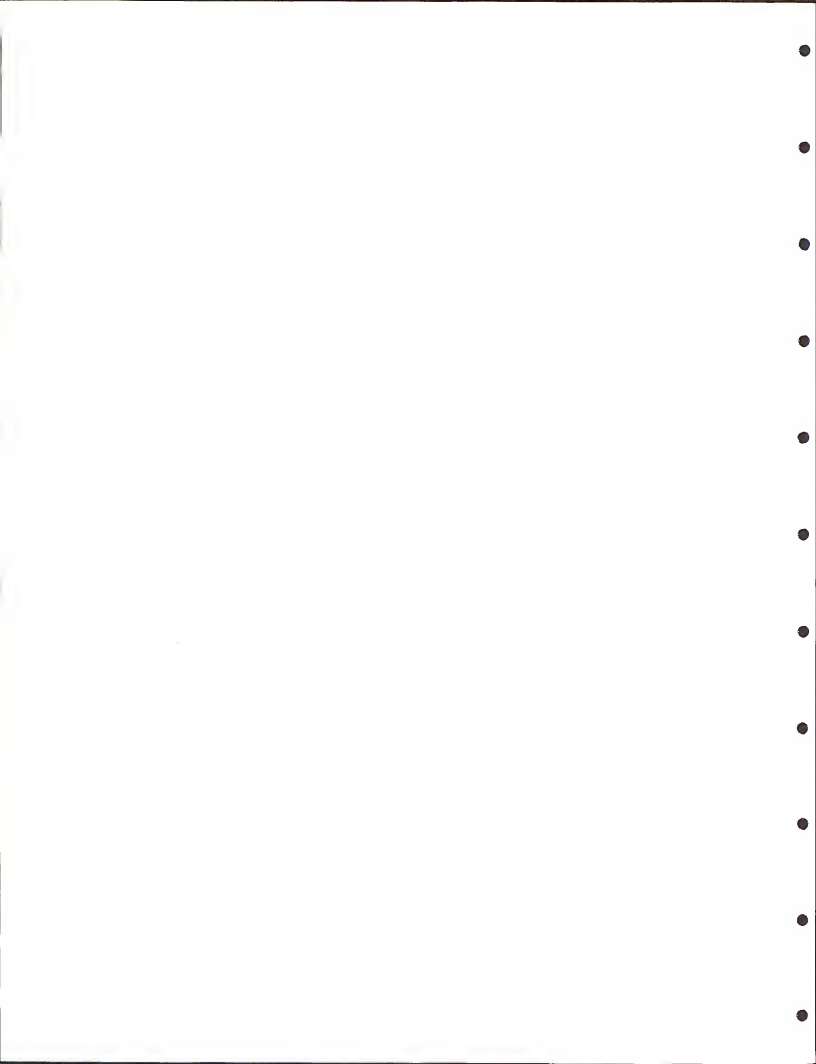
Cruise II began with a mobilization of the equipment aboard the M/V Sea Transporter in St. Petersburg on 15 August. The cruise terminated 28 August in Pensacola. During this cruise the following equipment was aboard the ship.

Decca Hi-Fix Navigation System

Raytheon Model DE719B Fathometer

Hydro Products Underwater TV System with Video Recorder and Monitor

Benthos Underwater 35 mm Camera



During this cruise approximately 33 h of videotape recordings from the underwater TV system and 2,500 color transparencies from the underwater camera were made. The color transparencies were developed aboard ship to insure that the camera system was working properly. The underwater equipment is described in Section 4 and Appendix A of Volume 1.

2.2 Data Reduction, Interpretation and Distribution

In order to minimize delay between the two cruises and to insure a draft report by 1 October 78 the mapping and data interpretation proceeded concurrently with the field work.

The Autocarta system on-board ship insured a post-plot shiptrack map was available at the completion of each survey area. Preliminary data interpretation was accomplished by the Project Geophysicist on board ship. These procedures resulted in preliminary interpretational maps being available for review within 24 hours of the completion of Cruise I.

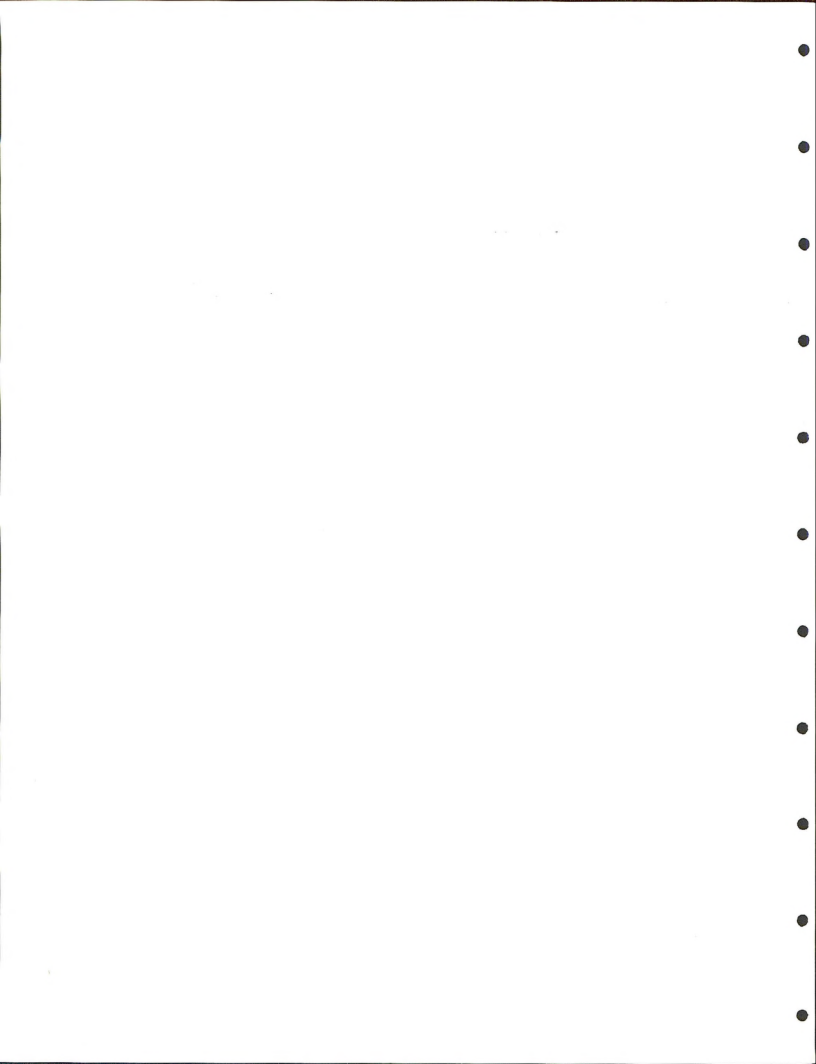
The following records and maps were obtained in the field or as a result of processing data.

1. Navigation post plots at a scale of 1:48,000. These maps are presented in Volume 2.
2. Computer listing of grid coordinates for each shot point from both the geophysical survey cruise and the ground truth survey cruise.
3. Analog records from the following geophysical systems:
Depth Sounder
EG&G UNIBOOM
Klein Deeptow Side Scan Sonar/3.5 kHz Sub-Bottom Profiler
4. 33 videotapes from the 23 TV transects
5. Approximately 2,500 35 mm color transparencies
6. Bathymetry and Sea Floor Sediment Characteristic Maps at a scale of 1:48,000. These Maps are presented in Volume 2.
7. All daily operations logs and instrument logs. These logs are included in this volume.



Upon completion of the final report all original field records and logs were sent to the Bureau of Land Management, New Orleans OCS Office, Hale Boggs Federal Building, 500 Camp Street, New Orleans, Louisiana. Copies of the data are not being retained by Woodward-Clyde Consultants and all requests for the data should be directed to the Bureau of Land Management.

One microfilm copy of all the geophysical records was sent to the National Geophysical and Solar Terrestrial Data Center, EDS/NOAA in Boulder, Colorado.

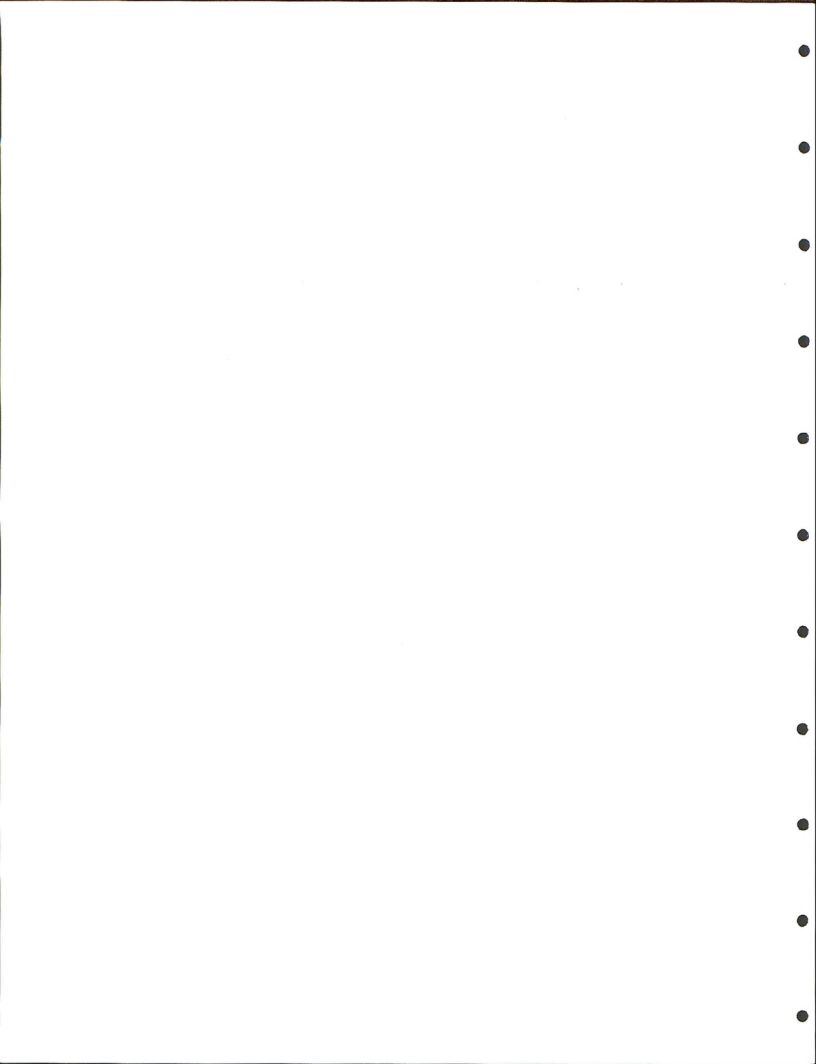


3.0 GEOPHYSICAL SURVEY REPORTS

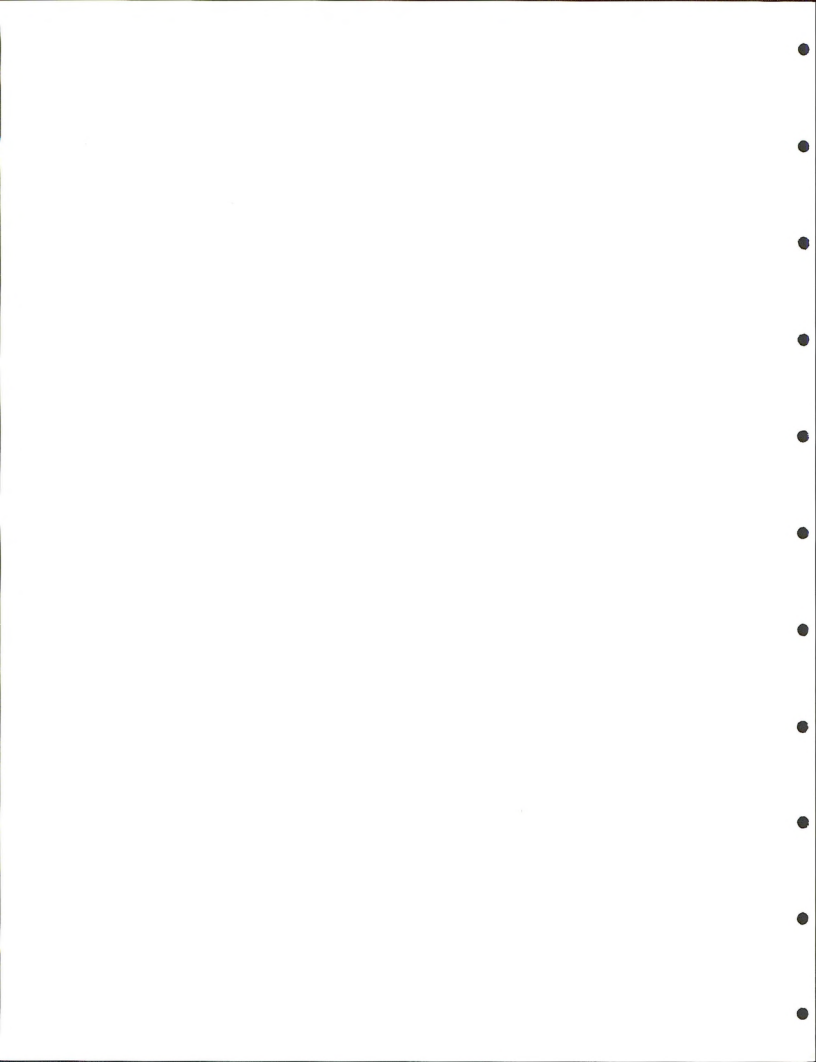
These are four logs which summarize the geophysical survey cruise.

- Chief Scientist's Log (Geomarine Field Log)
- Time Allotment Summary
- Daily Field Report
- Instrumentation Log

The Chief Scientist's Log is a summary of the days events. It is kept on a time basis for a 24 hour day. The Time Allotment Summary is a table which summarizes the time spent on various work tasks. It is derived directly from the Chief Scientist's Log. The Daily Field Report lists the crew, equipment and subcontractors employed on the project for each day. The Instrumentation Log lists the recording parameters for each of the instruments. This log is necessary for reduction and interpretation of the analog geophysical records.



3.1 Chief Scientist's Log



WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep KranDate 7-11-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

All Day

Sea transporter at H & H dock - MOB boat/equipment

All field personnel aboard

WCC _____

Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-12-78
Supervisor Beer

Time

All Day

Sea transporter at H & H dock - MOB boat/equipmentReady to sail by 2200 hrsWaiting on repair of EDO depth recorder

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep KranDate 7-13-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

0000-0800 Sea transporter alongside dock. EDO depth recorder repaired by 08000800-1000 Final preparations to get underway1000 Depart H & H dock1140 Arrive Shell fuel dock in Port Arthur1600 Depart Shell dock for sea1820 Past outer channel marker, enter Gulf of Mexico2400 Enroute to survey area

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-14-78
Supervisor Beer

Time

0000

Enroute to survey area

0940

Stop to test equipment, calibrate fathometer

1140

Enroute to survey area running at 7 kts. Working problems out of gear

1200

Enroute to survey area - Sky clear - Seas calm

2400

Enroute to survey area - Sky clear - Seas calm

WCC

Client

GEOMARINE FIELD LOG

Supervisor Beer

2355 Reset nav buoy, proceeding with fathometer calibration and laying gear

WCC	Client
-----	--------

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-16-78
Supervisor Beer

Time	
0000	Fathometer calibration in progress. Seas 2, light rain, moderate currents precluded bar checks. Fathometer cal based on lead line readings.
0030	Completed calibration w/set (inst) velocity of 1420 m/set - seems unreal, but checks w/lead line and line out on nav buoy. Depth 48'
0045	Seismic gear over the side, final checkout in progress
0228	Begin Line 1-106, S.P. -3
0514	End Line 1-106, S.P. 138
0603	Begin Line 1-105, S.P. 138
0853	End Line 1-105, S.P. 1
0913	Begin Line 1-104, S.P. 1
1111	End Line 1-104, S.P. 134
1125	Begin Line 1-103, S.P. 134
1155	Abort to work on 3.5 system, S.P. 116
1435	Begin Line 1-103, S.P. 134
1700	Break Line 1-103, S.P. 35 - Nav problems - Returning to buoy to recal
1800	Cannot locate ref. buoys. Expect they were picked up by a private boat. (This is Sunday)
1805	Returning to Pensacola to calibrate
2100	Arrive at #15 channel buoy to calibrate Nav. Sky scattered clouds, winds 5-10 kts, Seas 1'-2'

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Kran

Date 7-16-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

2155

Enroute to work area about 8 mi. out, Nav transmitter down aboard

boat. Must return to Pensacola for recal, will repair enroute

2240

Arrive at #15 buoy. Transmitter repaired, which now requires a

frequency shift in shore stations. Estimate 2 hours for shore

personnel to drive to stations and complete tuning

2400

Standing by to calibrate Hi-Fix. Shore station frequencies adjusted.

Bay calm, sky overcast 50%, extensive lightning activity to the West

WCC

Client

GEOMARINE FIELD LOG

Supervisor Beer

2400 Alongside city dock, Pensacola

WCC Client

GEOMARINE FIELD LOG

WCC Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
 Work Area Eastern Gulf of Mexico Date 7-19-78
 Supervisor Beer

Time	
0000	On Line 207
0035	End Line 207, S.P. 39
0105	Begin Line 206, S.P. 38
0149	End Line 206, S.P. 1
0218	Begin Line 205, S.P. 1
0301	End Line 205, S.P. 38
0350	Begin Line 204, S.P. 38
0429	End Line 204, S.P. 1
0456	Begin Line 203, S.P. 1
0538	End Line 203, S.P. 38
0605	Begin Line 202, S.P. 38
0645	End Line 202, S.P. 1
0706	Begin Line 201, S.P. 1
0753	End Line 201, S.P. 38
0832	Begin Line 106A, S.P. #1
0852	Abort Line 106A, S.P. 8 - Nav problems due to weather
0910	Lost all nav due to weather - Heavy rain passing
1015	Seismic gear aboard, steaming to nav reference buoy to the lane count. OK
1045	Depart buoy location for platform 289B, then to area #2 or #3.
	Area #1 completed
1830	Arrive Shell platform 289B to calibrate Hi-Fix. Signals weak

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-19-78
Supervisor Beer

Time

2000

Standing off 289B. Signals weak, Sky waves; Thunderheads and
rain/lightning storms above 10 miles off, heading toward our location

2400

Standing by on weather

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-20-78
Supervisor Beer

Time	
0000	Standing by on weather
0800	Moving into deep water to check and cal Klein system in deep water, and check EDO system. EDO fathometer usable only to 100 meters
0900	Moving back to 289B to attempt nav cal. Seas 2, Many rain squalls in area
0950	Calibration run very bad, cannot use
1130	Testing out Klein system
1200	Attempt Hi-Fix cal, rain squalls moving in from N.E. Cannot get cal
1220	Set course for Pensacola/Mobile area. Seas and winds increasing
1400	Past squall line, established contact w/Decca shoreman. Shore stations off frequency. Reset stations and transmitter. Returning to 289B to cal
1545	Arrive main pass block 289B
1620	Complete nav calibration. Winds 20-25 kts, Seas 2, Skies 50% overcast w/thunderheads
1700	Leave 289B area, Nav checks ok. v/w on CSE 360° T, Seas, 1'-2', Chop, 5'-6' swell, Winds 30-40 kts. Boat rolling heavily
1915	One shore station down. Continue present CSE/SPD to maintain Lane count. Station dead
1935	Buoy over the side, standing by
2105	Established contact with shoreman, who will check on station

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Supervisor Beer

Time

2400

Standing by reference buoy

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Kran Project 41069A
Work Area Eastern Gulf of Mexico Date 7-21-78
Supervisor Beer

Time

0000 Standing by reference buoy. Seas moderate, swell heavy, boat rolling
badly. Squalls in area

0115 Nav shore station up. Standing by reference buoy to confirm Lane count

0200 Lane count confirmed; leaving for Area 2

0900 Arrive Area 2. Deploy gear and check. Seas 5'-6', Winds 20-25 kts,
Squalls scattered throughout area, primarily N.E.

0922 Begin Line 2-112, S.P. 70. Using multielectrode sparker. Seas too
rough for uniboom. Seas confused, 1'-2' chop on 5'-6' swell from South.
Extensive thunderstorm activity to the North, affecting navigation

1027 End Line 2-112, S.P. 1

1122 Begin Line 2-111, S.P. 1

1246 End Line 2-111, S.P. 70

1323 Begin Line 2-110, S.P. 70

1419 End Line 2-110, S.P. 1

1430 Lost nav. Both channels on turn. Squall line North of the location.
Lost Lane count. Heading to Southend of Area 2 to locate reference nav

1745 Arrive vicinity of buoy using marginal Loran navigation. Loran signals
erratic. Heavy seas and dark clouds prevail

1825 Unable to locate reference buoy; Departing for Pensacola. Require
calibration on #15 buoy

2320 Arrive #15 buoy; proceeding on into port

continue

WCC

Client

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Kran

Date 7-21-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

2400

Underway to City Dock

WCC

Client

GEOMARINE FIELD LOG

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-23-78
Supervisor Beer

Time

0000	Standing by City Dock
0600	Depart City Dock
0645	Arrive #15 buoy, calibrate navigation system
1210	Arrive Area #2
1220	Drop nav reference buoy, with light and radar reflector
1245	Calibrate depth recorder with lead line - ok
1300	Navigation down to weather. Heavy squalls moving into area. Extensive water leakage in boat. Heavy in instrument room, some in living quarters, some in nav area of bridge. Instrument area tarped over to prevent damage
1405	Rain ceases, waiting for electrical storm interference to dissipate so we can re-establish lane count
1415	Standing off reference buoy
1430	Lost sight of buoy in heavy seas. Unable to get I.D. on radar
1500	Sighted reference buoy
1508	Established lane count
1515	Seismic gear over the side, Seas still very rough, 5'-6', Boat rolling heavily
1545	Lost nav signals due to heavy squall activity, just prior to starting line
1550	Pick up seismic gear. Weather worsening
1700	Established navigation
1730	Stream seismic gear

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-23-78
Supervisor Beer

Time

1742

Start Line 2-109

1745

Abort Line 2-109, navigation down to weather, gear aboard

1915

Establish navigation

1930

Stream seismic gear

1941

Start Line 2-109, S.P. 70

2103

End Line 2-109, S.P. 1

2120

Start Line 2-108, S.P. 1

2248

End Line 2-108, S.P. 70

2312

Start Line 2-107, S.P. 70

2400

On Line 2-107

WCC Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-24-78
Supervisor Beer

Time

0000	On Line 2-107
0021	End Line 2-107, S.P. 1
0150	Start Line 2-106, S.P. 1
0324	End Line 2-106, S.P. 70
0336	Start Line 2-105, Nav down, thunderstorms throughout area
0426	Restart Line 2-105, S.P. 70
0529	End Line 2-105, S.P. 1
0551	Start Line 2-104, S.P. 1
0727	End Line 2-104, S.P. 70
0732	Start Line 2-103, S.P. 70
0827	Break Line 2-103, S.P. 20, nav down to weather. Heavy thunderstorm activity, rain. Bad weather with rain squalls and extensive thunderstorms throughout the afternoon. Standing off reference buoy
1645	Navigation established.
1700	Seismic gear over the side
1717	Start Line 2-103, S.P. 30
1749	End Line 2-103, S.P. 1
1838	Start Line 2-102, S.P. 1
1944	End Line 2-102, S.P. 70
2002	Start Line 2-101, S.P. 70
2103	End Line 2-101, S.P. 1

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-24-78
Supervisor Beer

Time

2151 Start Line 2-201, S.P. 70

2248 End Line 2-201, S.P. 1

2315 Start Line 2-202, S.P. 1

2400 On Line 2-202, S.P. 45

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS
GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep None

Date 7-25-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

1802 End Line 3-111, S.P. 70

1817 Start Line 3-110, S.P. 70

1940 End Line 3-110, S.P. 1

2009 Start Line 3-109, S.P. 1

2116 End Line 3-109, S.P. 70

2138 Start Line 3-108, S.P. 70

2248 End Line 3-108, S.P. 1

2306 Start Line 3-107, S.P. 1

2335 Abort Line 3-107, S.P. 20; lost navigation signals

2345 Pull in gear, weather picking up. Lightning to West. Heading
toward platform to standby

2400 Enroute to MP-254A

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-25-78
Supervisor Beer

Time	
0000	On Line 2-202
0026	End Line 2-202, S.P. 70
0050	Start Line 2-203, S.P. 70
0149	End Line 2-203, S.P. 1
0215	Start Line 2-204, S.P. 1
0322	End Line 2-204, S.P. 70
0340	Gear aboard. Squalls throught area, intermittent rain
0435	Arrive at Nav reference buoy to check lane count - ok
0445	Very heavy rain and thunderstorm activity. Nav down to weather.
	Standing off buoy
0900	Recal nav on buoy; depart for Area 3
1100	Arrive vicinity of area. Cannot lead line (too deep), EDO depth sounder
	down. Depth readings taken with sparker on E.P.C. EDO recorder
	officially dead. Water too deep and drifting too fast to set buoy.
	Waves 4'-5', some rain. Heading for platform S.W. of Block 573
	to the navigation for reference
1300	Arrive Chevron platform MP-254A, Calibrate for navigation reference
1330	Stream gear, heading onto line
1426	Start Line 3-112, S.P. 70
1633	End Line 3-112, S.P. 1
1657	Start Line 3-111, S.P. 1

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep NoneDate 7-26-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

0000

Enroute to MP-254A

0100

Standing off Mp-254A, waiting for weather to improve. Navigation

down to weather. Increasing squall and thunderstorm activity

to the West

1200

Rain, light to very heavy, intermitent throughout the night.

Extensive thunderstorm activity. Presently raining. Seas calm,

Winds 10-15 kts

1415

Acquire nav signals, still raining lightly

1430

Confirm lane count at platform MP-254A; underway to pick up Line.

Stream gear

1536

Start Line 3-107, S.P. 70

1641

End Line 3-107, S.P. 1

1718

Start Line 3-201, S.P. 33

1757

End Line 3-201, S.P. 70

1820

Start Line 3-202, S.P. 70*

1853

End Line 3-202, S.P. 33

1953

Start Line 3-106, S.P. 33

2142

End Line 3-106, S.P. 134

2229

Start Line 3-105, S.P. 134

2359

End Line 3-105, S.P. 33

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-27-78
Supervisor Beer

Time	
0000	Leading out of Line 3-105
0045	Thunderstorms and squalls in area, nav signals bad. Leaving for reference platform to check lane count. Gear aboard
0220	Acquired lane count at platform
0240	Depart for work area
0310	Frequent squalls, rain moderate to heavy; signals bad; but holding lane count
0354	Nav down - lost lane count; heavy squall activity; Seas 5'-6'; Boat rolling heavily
0700	Decca's SSB radio out. Heading North to establish communication via VHF radio. Raining hard
0900	Signals acquired; Stations unknown since third shore station added to chain today. No communications w/shore
1030	Contacted Decca/Houston
1130	Contacted WCC/Orange
1145	Proceeding to Pensacola to replace communications radio; Fuel/water ship; Drop off data, etc. Rain continues
1600	Arrive City Dock, Pensacola
1700	Decca radio replaced. Received ok to proceed to Area #4. Awaiting fuel and radar repair

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep None Project 41069A
Work Area Eastern Gulf of Mexico Date 7-27-78
Supervisor Beer

Time

1800

Radar repair and fuel unavailable till Friday a.m. Boat will not
sail without radar

2400

Alongside City Dock, Pensacola

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Dewald

Date 7-28-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

0000

Alongside City Dock, Pensacola

1430

Radar repair completed

1700

Fuel truck arrives

1800

All provisions aboard

1845

Fueling completed

1915

Depart Pensacola dock

2005

Calibrate navigation on #15 buoy, enroute to Area 4

2400

Enroute to Area #4

Note: Intermittent heavy rain from 0000 to about 1300

(BLM rep aboard)

WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Dewald

Date 7-29-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

0000	Enroute to Area #4
0600	Arrive Area 4, preparing navigation reference buoy
0830	Navigation reference buoy launched and secured following three attempts. Heavy currents
0840	Establish lane count at ref buoy location
0943	Start Line 4-113, S.P. 33
1025	End Line 4-113, S.P. 1
1107	Start Line 4-114, S.P. 1
1139	End Line 4-114, S.P. 38
1200	Nav down; repairing digitizer
1500	Digitizer repaired
1511	Start Line 4-115, S.P. 38 - Skies clear, Winds 15-20 kts, Swells 3'-4'
1600	End Line 4-115, S.P. 1
1614	Start Line 4-116, S.P. 1
1654	End Line 4-116, S.P. 38
1713	Start Line 4-117, S.P. 38
1723	Abort Line 4-4-117, S.P. 28 - Navigation problems
1805	Continue Line 4-117, S.P. 32
1834	End Line 4-117, S.P. 1
1917	Start Line 4-118, S.P. 1
2001	End Line 4-118

continue

WCC

Client

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 7-29-78
Supervisor Beer

Time

2010 Standing by survey area while nav plots Area 4 preplots

*(See Note below)

2215 Preplot completed; Heading for Line

2230 Digitizer problems; Circling

2345 Problem corrected; Heading for Line

2400 Coming onto Line

*Note: Nav computer terminal printer not functioning. Running this area in manual nav mode till replacement terminal is sent down. Plotter and Redbird appear to function correctly. Assuming data onto tape is valid. Cannot verify till replacement printer is installed. Will continue with Area 4 work on assumption data on tape is valid.

WCC

Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE FIELD LOG

Client BLM Rep. Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 7-30-78
Supervisor Beer

Time	
0000	Heading onto Line
0009	Start Line 4-112, S.P. 1
0230	End Line 4-112, S.P. 102
0301	Start Line 4-111, S.P. 102
0531	End Line 4-111, S.P. 1; Seas 4' Chop, Boat rolling. Appears to be a strong current running crabbing 15 ⁰ off Line heading to stay on Line. (Steering 345 ⁰ to run Line 360 ⁰)
0551	Start Line 4-110, S.P. 1
0728	End Line 4-110, S.P. 102
0821	Start Line 4-109, S.P. 102
0900	Abort Line 4-109, S.P. 80. Navigation problems
0943	Pick up Line 4-109, S.P. 85
1134	End Line 4-109, S.P. 1
1145	Gear on board
1210	Tie lane count at navigation reference buoy, ok
1215	Depart Area #4 for Panama City to pick up navigation system. Replacement computer terminal
1730	Arrive dock in Panama City; exchange terminals and check out unit. Print head on replacement bad
1830	Terminal repaired. Weather picking up rapidly. Winds 35-40 kts. Depart dock with some difficulty due to onshore winds

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE FIELD LOG

Time

WCC Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 7-31-78
Supervisor Beer

Time

0000	Searching for nav reference buoy
0045	Violent rolling due to high seas. 12 VDC wet-cell batteries for Hi-Fix system broke loose from mounts. One thrown down to deck below. Nav system dead (short-term internal supply maintains hundredths cal) Lost lane count. Doubtful if lane count reference buoy can be found before daylight. Loran signals bad due to storm
0630	Sighted nav reference buoy
0645	Lane count established. During process, buoy snagged. Buoy reset and position marked. Standing by in vicinity of ref buoy till squalls in area clear. Rain intermittent, light to heavy
0745	Stream seismic gear
0800	Nav computer problems; standing by
0921	Start Line 4-108
1037	End Line 4-108. Seas calming down. Sun shining
1110	Start Line 4-107, S.P. 102
1303	End Line 4-107, S.P. 1
1346	Start Line 4-106, S.P. 33
1350	Abort Line 4-106, S.P. 37; Lost nav signals. Pick up gear and head for reference buoy. Raining heavily
1520	arrive buoy location. Spar buoy gone, styrofoam subfloats remain. Establish lane count

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep DewaldDate 8-01-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

0000 On Line 4-102

0045 End Line 4-102

0100 Start Line 4-101, S.P. 102

0212 End Line 4-101, S.P. 33

0405 Start Line 4-201, S.P. 33

0534 End Line 4-201, S.P. 102

0554 Start Line 4-202, S.P. 102

0655 End Line 4-202, S.P. 33

0740 Start Line 4-203, S.P. 1

0901 End Line 4-203, S.P. 70

0923 Start Line 4-204, S.P. 70

1027 End Line 4-204, S.P. 1

1053 Start Line 4-205, S.P. 1

1210 End Line 4-205, S.P. 70

1252 Start Line 4-206, S.P. 70

1401 End Line 4-206, S.P. 1

1415 Pull in seismic gear, head for lane count buoy

1500 Arrive nav reference buoy. Tie lane count. Recover buoy

1515 Depart Area #4 for Crystal River. Shore navigation chain being moved to vicinity of Area #5. Expected arrival 0937, Wednesday

2400 Enroute to Area #5 via nav cal buoy off Crystal River

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-02-78
Supervisor Beer

Time

0000	Enroute to Area #5. Seas calm; Sky clear. Lightning and cloud buildup on eastern horizon
0938	Arrive Withlacoochee River Entrance Buoy #1 for nav calibration. Both stations up, signals strong. Weather good. Incorrect coordinates given (wrong zone); standing by buoy waiting info from Decca in Houston
1215	Data arrived. Completed nav calibration. Enroute to work area
1515	Arrive Area #5 work area
1525	Drop nav lane count reference buoy; lead line depth check
1535	Stream seismic gear. Seas calm 1'-2', Sky clear, Winds 10-15 kts
1607	Start Line 5-201, S.P. 33
1714	End Line 5-201, S.P. 102
1723	Start Line 5-202, S.P. 102
1831	End Line 5-202, S.P. 33
1840	Start Line 5-203, S.P. 33
1943	End Line 5-203, S.P. 102
1953	Start Line 5-204, S.P. 102
2102	End Line 5-204, S.P. 33
2105	Head for reference buoy to check lane count - ok
2222	Start Line 5-205, S.P. 33
2326	End Line 5-205, S.P. 102

continue

WCC

Client

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Dewald

Date 8-02-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

2357

Start Line 5-206, S.P. 102

2400

On Line 5-206

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-03-78
Supervisor Beer

Time	
0000	On Line 5-206
0100	End Line 5-206, S.P. 33
0144	Start Line 5-207, S.P. 1
0321	End Line 5-207, S.P. 102
0333	Start Line 5-208, S.P. 102
0408	Break Lines-208, S.P. 67; Malfunction in 255 seismic recorder
0438	Continue Line 5-208, S.P. 80
0553	End Line 5-208, S.P. 1
0627	Start Line 5-209, S.P. 1
0803	End Line 5-209, S.P. 102
0815	Start Line 5-210, S.P. 102
0944	End Line 5-210, S.P. 1
1007	Start Line 5-211, S.P. 1
1139	End Line 5-211, S.P. 102
1150	Start Line 5-212, S.P. 102
1334	End Line 5-212, S.P. 1
1359	Start Line 5-106, S.P. 70
1426	End Line 5-106, S.P. 33
1507	Start Line 5-105, S.P. 33
1545	End Line 5-105, S.P. 70
1605	Start Line 5-104, S.P. 70

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Project 41069A

Client BLM Rep Dewald

Date 8-03-78

Work Area Eastern Gulf of Mexico

Supervisor Beer

Time

1712 End Line 5-104, S.P. 1

1735 Start Line 5-103, S.P. 1

1841 End Line 5-103, S.P. 70

1859 Start Line 5-102, S.P. 70

1955 End Line 5-102, S.P. 1

2013 Start Line 5-101, S.P. 1

2119 End Line 5-101, S.P. 1

2154 Start dry paper test run S-208, S.P. 70. Retrieve gear

2210 End test run S-208, S.P. 50 - Head for lane count buoy

2330 Check lane count - ok. Retrieve buoy

2345 Leave for Tampa, St. Petersburg

2400 In transit

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-04-78
Supervisor Beer

Time

0000 Enroute to Tampa, St. Petersburg. Navigation shore stations being
moved to southern locations

0800 Arrive outer harbor area

1030 Alongside commercial dock in Manatee

(Switch from Houston to Tampa time)

1800 Food and water aboard. Unable to depart till proper nav coordinates
are available. Original buoy to be used no longer in the channel.
Will use another cal point. Waiting for coordinates to be telephoned
from Decca in Houston

1900 Navigation cal point coordinates arrive

1930 Slave station #1 down. No navigation

2400 Waiting for Slave #1 to be repaired

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep DewaldDate 8-05-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

0000	Waiting for navigation shore station to be repaired
0400	Station #1 up
0510	Depart dock, Port Manatee
0650	Calibrate navigation at old Quarantine Pier Light. Leave for Area #6
1210	Navigation Station #1 down. Drop buoy and circle area
1405	Nav station #1 up. Check lane count; continue to Area #6
1640	Arrive Work Area #6
1645	Lane count buoy over the side
1710	Establish lane count on calibration buoy
1715	Begin fathometer calibration on Raytheon and EDO units
1745	Lay gear. Weather clear and sunny, sea state 2, winds 5-10 kts
1759	Start Line 6A-101, S.P. 38
1835	End Line 6A-101, S.P. 1
1855	Start Line 6A-102, S.P. 1
1915	Abort Line 6A-102, S.P. 14. Excessive cable noise on sidescan records
2030	Restart 6A-102, S.P. 1
2105	End Line 6A-102, S.P. 38
2146	Start Line 6A-206, S.P. 1
2150	Abort Line 6A-206, S.P. 4. Lost lane count. Weather vicinity Sta 2

continue

WCC

Client

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-05-78
Supervisor Beer

Time

2200

Gear aboard. Heading to nav calibration (lane count) buoy. Working
on side scan during this time. Problem in cable junction on fish
towing bridal

2315

Establish lane count at buoy

2400

Enroute to work area. Severe thunderstorm activity in vicinity of
Station #2, Charlotte Harbor, from tropical low off Florida Keys

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-06-78
Supervisor Beer

Time

0000	Enroute to Area 6A
0035	Seismic gear over the side
0046	Start Line 6A-206, S.p. 37
0124	End Line 6A-206, S.P. 1
0136	Start Line 6A-205, S.P. 1
0214	End Line 6A-205, S.P. 38
0226	Start Line 6A-204, S.P. 38
0309	End Line 6A-204, S.P. 1
0320	Start Line 6A-203, S.P. 1
0355	End Line 6A-203, S.P. 38
0408	Start Line 6A-202, S.P. 38
0450	End Line 6A-202, S.P. 1
0501	Start Line 6A-201, S.P. 1
0534	End Line 6A-201, S.P. 38
0601	Start Line 6B-102, S.P. 1
0651	End Line 6B-102, S.P. 38
0705	Nav down, lost lane count. Continued bad weather in area of Station 2.
	Station down
0805	Pick up seismic gear. Depart for lane count buoy
0915	Nav up. Establish lane count and return to Area 6B
1030	Lay seismic gear

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-06-78
Supervisor Beer

Time	
1047	Start Line 6B-101, S.P. 1
1123	End Line 6B-101, S.P. 38
1148	Start Line 6B-206, S.P. 38
1223	End Line 6B-206, S.P. 1
1235	Start Line 6B-205, S.P. 1
1314	End Line 6B-205, S.P. 38
1345	Start Line 6B-204, S.P. 38
1424	End Line 6B-204, S.P. 1
1455	Start Line 6B-203, S.P. 1
1538	End Line 6B-203, S.P. 38. Wind and seas picking up. Many thunderstorms visible in area. Intermittent rain, moderate to heavy
1549	Start Line 6B-202, S.P. 38
1625	End Line 6B-202, S.P. 1
1647	Start Line 6B-201, S.P. 1
1729	End Line 6B-201, S.P. 38. ² Storms past; seas calm. Pull gear.
1830	Tie lane count and retrieve buoy
2005	Set lane count reference buoy for Areas 6C and 7. Seas building. Winds increasing. Overcast.
2115	Stream seismic gear
2129	Start Line 6C-206, S.P. 1
2245	End Line 6C-206, S.P. 70

continue

WCC _____ Client _____

continued

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-06-78
Supervisor Beer

Time

2301 Start Line 6C-205, S.P. 70

2400 On Line 6C-205

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-07-78
Supervisor Beer

Time	
0000	On line 6C-205
0006	End line 6C-205, S.P. 1
0019	Start line 6C-204, S.P. 1
0131	End line 6C-204, S.P. 70
0145	Start line 6C-203, S.P. 70
0317	End line 6C-203, S.P. 1 Seas 4' - 6', winds 15-25 kts. Thunderstorm activity in all quadrants. Intermittent rains. Boat rolling heavily
0330	Start line 6C-202, S.P. 1
0434	End line 6C-202, S.P. 70
0445	High seas and very heavy rain. Standing by. Violent rolling
0535	Start line 6C-201, S.P. 70
0723	End line 6C-201, S.P. 1. Heavy rain continues. Seas 6' - 7'. Cannot run north-south lines in area 6C. Departing for 7.
0730	Pull gear aboard
1010	Stream seismic gear, area 7
1022	Start line 7-201, S.P. 1
1134	End line 7-201, S.P. 70
1155	Start line 7-202, S.P. 1
1304	End line 7-202, S.P. 1
1316	Start line 7-203, S.P. 1
1435	End line 7-203, S.P. 70. Seas 2'-3', winds 20-25 kts. Strong currents

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-07-78
Supervisor Beer

Time

1449 Start line 7-204, S.P. 70

1606 End line 7-204, S.P. 1

1647 Start line 7-205, S.P. 1

1810 End line 7-205, S.P. 70

1829 Start line 7-206, S.P. 70

1942 End line 7-206, S.P. 1

1959 Start line 7-207, S.P. 1

2111 End line 7-207, S.P. 70

2123 Start line 7-208, S.P. 70

2235 End line 7-208, S.P. 1

2248 Start line 7-209, S.P. 1

2400 On line 7-209

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-08-78
Supervisor Beer

Time	
0000	On line 7-209
0002	End line 7-209, S.P. 70
0014	Start line 7-210, S.P. 70
0140	End line 7-210, S.P. 1
0153	Start line 7-211, S.P. 1
0300	End line 7-211, S.P. 70
0315	Start line 7-212, S.P. 70
0452	End line 7-212, S.P. 1
0540	Start line 7-104, S.P. 70
0655	End line 7-104, S.P. 1
0715	Start line 7-103, S.P. 1
0833	End line 7-103, S.P. 70
0852	Start line 7-102, S.P. 70
0958	End line 7-102, S.P. 1
1021	Start line 7-101, S.P. 1
1139	End line 7-101, S.P. 70
1145	Pull seismic gear, bar check raytheon fathometer
1200	Depart for area 6C to run N-S tie lines
1230	Tie land count to navigation Reference buoy
1340	Stream seismic gear
1357	Start line 6C-104, S.P. 38

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOGProject 41069AClient BLM Rep DewaldDate 8-08-78Work Area Eastern Gulf of MexicoSupervisor Beer

Time

1431	End line 6C-104, S.P. 1
1455	Start line 6C-103, S.P. 1
1548	End line 6C-103, S.P. 38
1611	Start line 6C-102, S.P. 38
1646	End line 6C-102, S.P. 1
1710	Start line 6C-101, S.P. 1
1749	End line 6C-101, S.P. 38 Seas still 4'-5' swell, winds 15-20 kts. Heavy clouds on horizon - east.
1810	Tie lane count at nav reference buoy and depart for area 8.
2130	Drop buoy at north end of area 8 and lane count. Seas building. Thunder-storm activity very strong to east. Severe storms in progress in vicinity of shore stations.
2210	Steam seismic gear, weather calm, seas 2'-3' sell. Moderate to strong currents.
2225	Start line 8-101, S.P. 1
2344	End line 8-101, S.P. 70
2400	On line change Note: Discoverend error in shooting of area 6A - tie line off = 800' west. Informed preplot data for areas 6-10 not delivered to boat in Tampa as planned.

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-09-78
Supervisor Beer

Time	
0000	On line change
0003	Start line 8-102, S.P. 70
0100	Break line 8-102, S.P. 20, side scan down.
0230	Side scan repaired
0303	Continue line 8-102, S.P. 24
0330	End line 8-102, S.P. 1
0351	Start line 8-103, S.P. 1
0456	End line 8-103, S.P. 70
0519	Start line 8-104, S.P. 70
0633	End line 8-104, S.P. 1
0658	Start line, 8-201, S.P. 1
0756	End line, 8-201, S.P. 70
0807	Start line, 8-202, S.P. 70
0920	End line, 8-202, S.P. 1
0935	Start line, 8-203, S.P. 1
1030	End line, 8-203, S.P. 70
1043	Start line, 8-204, S.P. 70
1152	End line, 8-204, S.P. 1
1204	Start line, 8-205, S.P. 70
1321	End line, 8-205, S.P. 70
1342	Start line 8-206, S.P. 70
1502	End line 8-206, S.P. 1

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-09-78
Supervisor Beer

Time

1514 Start line 8-207, S.P. 1
1626 End line 8-207, S.P. 70 Nav signals marginal due to extensive thunder-
storm activity. Several visible in area. Standing by.
1746 Start line 8-208, S.P. 1
1908 End line 8-208, S.P. 70
1915 Circling for radio call (cannot transmit while on line due to navigation
interfearance)
1946 Start line 8-209, S.P. 70
2048 End line 8-209, S.P. 1
2050 Circling for radio call
2147 Start line 8-210, S.P. 1
2302 End line 8-210, S.P. 70
2315 Start line 8-211, S.P. 70
2400 On line 8-211

WCC

Client

GEOMARINE FIELD LOG

Time

WCC	Client
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WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 08-11-78
Supervisor Beer

Time

0000	On line 9-202
0007	End line 9-202, S.P. 1
0021	Start line 9-203, S.P. 1
0208	End line 9-203, S.P. 102
0221	Start line 9-204, S.P. 102
0405	End line 9-204, S.P. 1
0417	Start line 9-205, S.P. 1
0601	End line 9-205, S.P. 102
0612	Start line 9-206, S.P. 102
0759	End line 9-206, S.P. 1
0800	Storms in area, occasional rain. Seas 3'-4', winds 10-15 knots. Sky 100% overcast. Standing by til storms pass.
0943	Start line 9-106, S.P. 38
1019	End line 9-106, S.P. 1
1037	Start line 9-105, S.P. 1 ²
1117	End line 9-105, S.P. 38
1130	Start line 9-207, S.P. 33
1235	End line 9-207, S.P. 102
1251	Start line 9-208, S.P. 102
1413	End line 9-208, S.P. 33
1533	Start line 9-209, S.P. 33

continue

WCC _____ Client _____

GEOMARINE FIELD LOG

Supervisor Beer

2400 On line 9-103

WCC	Client
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WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 08-12-78
Supervisor Beer

Time

0000	On line 9-103
0002	End line 9-103, S.P. 70
0023	Start line 9-213, S.P. 65
0104	End line 9-213, S.P. 102
0115	Start line 9-214, S.P. 102
0151	End line 9-214, S.P. 65
0203	Start line 9-215, S.P. 65
0243	End line 9-215, S.P. 102
0254	Start line 9-216, S.P. 102
0331	End line 9-216, S.P. 65
0342	Start line 9-217, S.P. 65
0420	End line 9-217, S.P. 102
0431	Start line 9-218, S.P. 102
0508	End line 9-218, S.P. 65
0535	Start line 9-102, S.P. 102
0719	End line 9-102, S.P. 1
0739	Start line 9-101, S.P. 1
0912	End line 9-101, S.P. 102
0920	Seismic gear aboard
0930	Fathometer bar check
1050	Lane check at nav reference buoy

continue

WCC _____ Client _____

GEOMARINE FIELD LOG

Supervisor Beer

2400 On line 10-209

WCC Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8 -13-78
Supervisor Beer

Time

0000	On line 10-209
0011	End line 10-209, S.P. 1
0025	Start line 10-211, S.P. 1
0129	End line 10-211, S.P. 70
0147	Start line 10-213, S.P. 70
0256	End line 10-213, S.P. 1
0312	Start line 10-215, S.P. 1
0335	Abort line 10-215, S.P. 30 Navigation computer failure
0802	Continue line 10-215, S.P. 28 Running on manual navigation
0837	End line 10-215, S.P. 70
0858	Start line 10-217, S.P. 70
1002	End line 10-217, S.P. 1 Skies clear, seas building slightly from very calm to 1'-2'. Winds 5-10 knots.
1054	Start line 10-104, S.P. 102
1250	End line 10-104, S.P. 1
1310	Start line 10-103, S.P. 1
1446	End line 10-103, S.P. 102
1505	Start line 10-102, S.P. 102
1645	End line 10-102, S.P. 1
1706	Start line 10-101, S.P. 1
1838	End line 10-101, S.P. 102

continue

WCC

Client

GEOMARINE FIELD LOG

WCC	Client
-----	--------

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Dewald Project 41069A
Work Area Eastern Gulf of Mexico Date 8-14-78
Supervisor Beer

Time

0000	On line change
0030	Start line 10-212, S.P. 1
0133	End line 10-212, S.P. 70
0156	Start line 10-210, S.P. 70
0308	End line 10-210, S.P. 1
0324	Start line 10-208, S.P. 1
0433	End line 10-208, S.P. 70
0450	Start line 10-206, S.P. 70
0555	End line 10-206, S.P. 1
0613	Start line 10-204, S.P. 1
0728	End line 10-204, S.P. 70
0752	Start line 10-202, S.P. 70
0859	End line 10-202, S.P. 1
0912	Seismic gear aboard, underway to land-count buoy. Skies clear, seas clam, wind 5-10 knots
0955	Check lane count at nav. reference buoy
1000	Depart for St. Peterstburg
2130	Arrive dock, St. Petersburg End of cruise I

WCC _____ Client _____



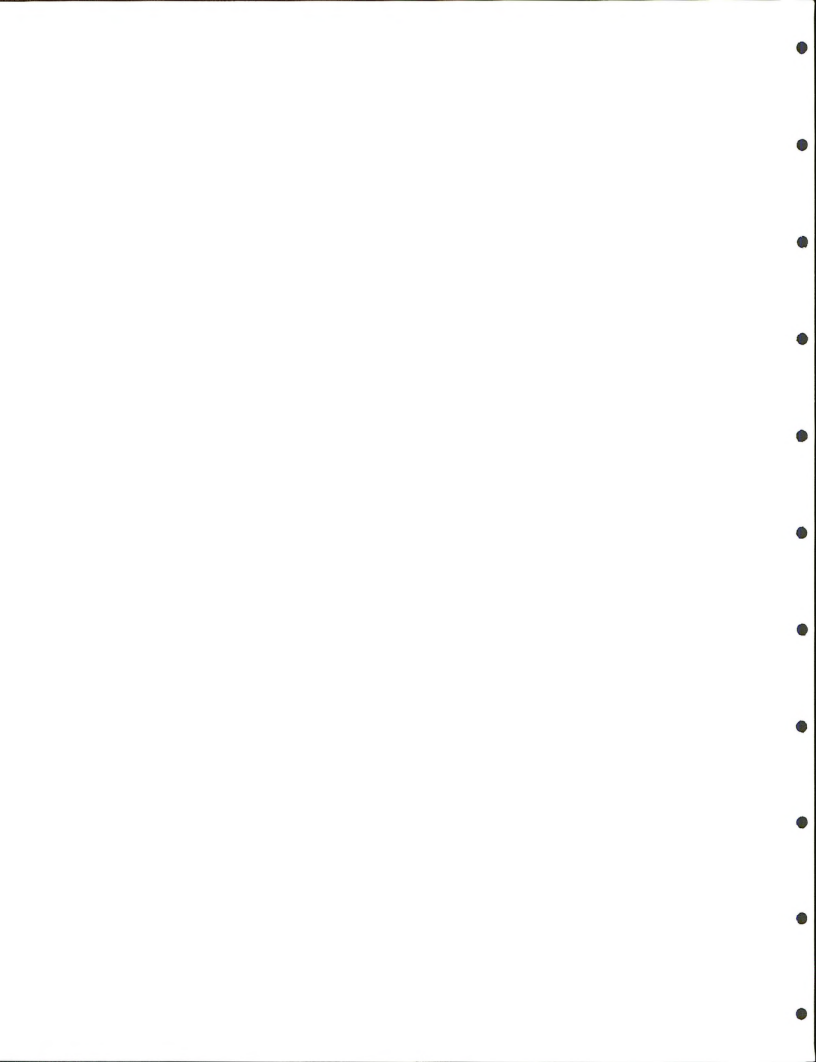
3.2 Time Allotment

TABLE OF TIME ALLOTMENT (HOURS)
CRUISE I GEOPHYSICAL SURVEY

DESCRIPTION: <u>DAY</u>	PORT <u>TIME</u>	TRANSIT <u>TIME</u>	SURVEY <u>TIME</u>	DOWN* <u>TIME</u>
7/13	10	14		
7/14		24		
7/15		24		
7/16			15	5W, 2N, 2E
7/17			5	19N
7/18			8	16N
7/19		10	9	5W
7/20				14W, 10N
7/21			6	16W, 2N
7/22	8			16W
7/23	6		5	13W
7/24			16	8W
7/25		5	15	4W
7/26			9	15W
7/27		4		3W, 10N, 7S
7/28	5	4		15S
7/29		6	11	7N
7/30			12	12N
7/31			14	2W, 8N
8/1		8	16	
8/2		15	9	
8/3			24	
8/4	7	11		6N
8/5		10	5	7N, 2E
8/6		1	20	3W
8/7		2	22	
8/8		3	21	
8/9			21	1W, 2E
8/10		16	8	
8/11			24	
8/12		4	20	
8/13			19	5N
8/14	2	11	11	

*DOWN TIME SOURCE

E = WCC EQUIPMENT FAILURE
N = NAVIGATION EQUIPMENT FAILURE
S = SHIP PROBLEMS
W = WEATHER EFFECTING NAVIGATION SIGNALS AND/OR
DATA QUALITY



3.3 Daily Operational Log



WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/11/78
Area EASTERN GULF OF MEXICO - PORT ARTHUR, TEXAS Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7.	
4. GALLARDE	12	8.	

Time Start Work Day 0800
Time End Work Day 2200

Time Boat Leaves Dock DOCKSIDE
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 3

Rental Vehicles 1. HERTZ CAR 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished BEER/MEES TRAVEL TO PORT ARTHUR; CONTINUE MOBILIZATION OF SURVEY VESSEL

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather SCATTERED SHOWERS

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/12/78
Area EASTERN GULF OF MEXICO - PORT ARTHUR, TEXAS Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0800
Time End Work Day 2200

Time Boat Leaves Dock DOCKSIDE
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 3

Rental Vehicles 1. HERTZ CAR 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished COMPLETE MOBILIZATION OF SURVEY VESSEL

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather THUNDERSTORMS

Comments _____

Initiator: MCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Area EASTERN GULF OF MEXICO - PORT ARTHUR, TEXAS Date 7/13/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	8
2. RESTA	8	6. MEES (ON SHORE)	
3. BURKE	8	7. _____	
4. GALLARDE	8	8. _____	

Time Start Work Day 0800
Time End Work Day 2200

Time Boat Leaves Dock 1000 (H & H DOCK)
Time Boat Ties Up 1140-1600 AT FUEL DOCK

WCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished DEPART FOR SURVEY AREA

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	
6. _____	
7. _____	
8. _____	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/14/78
Area EASTERN GULF OF MEXICO Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	8
2. RESTA	8	6. MEES (ON SHORE)	
3. BURKE	8	7. _____	
4. GALLARDE	8	8. _____	

Time Start Work Day 0700
Time End Work Day 2200

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished ENROUTE TO SURVEY AREA; CHECK OUT ALL EQUIPMENT

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH ON FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/15/78
Area EASTERN GULF OF MEXICO Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	8
2. RESTA	8	6. MEES (ON SHORE)	
3. BURKE	8	7. _____	
4. GALLARDE	8	8. _____	

Time Start Work Day 0700
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. HES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished ENROUTE TO SURVEY AREA; CALIBRATE NAVIGATION; CHECK & CAL SEISMIC
GEAR

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: MCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/16/78
Area EASTERN GULF OF MEXICO - AREA #1 Supervisor BEER

Field Personnel

NAME	HOURS
1. BEER	12
2. RESTA	12
3. BURKE	12
4. GALLARDE	12

NAME	HOURS
5. McELMAN	12
6. MEES (ON SHORE)	
7.	
8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 45 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Area EASTERN GULF OF MEXICO - AREA #1 Date 7/17/78
Supervisor BEER

Field Personnel

NAME	HOURS
1. BEER	12
2. RESTA	12
3. BURKE	12
4. GALLARDE	12

NAME	HOURS
5. McELMAN	12
6. MEES (ON SHORE)	
7.	
8.	

Time Start Work Day 0000
Time End Work Day 1400

Time Boat Leaves Dock _____
Time Boat Ties Up 1400

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 15 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/18/78
Area EASTERN GULF OF MEXICO - AREA #1 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. CALLARDE	12	8. _____	

Time Start Work Day 1200
Time End Work Day 2400

Time Boat Leaves Dock 1300
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 15 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH ON FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/19/78
Area EASTERN GULF OF MEXICO - AREA #1 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 21 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Total Credit Expenses _____

Weather FAIR/POOR

Comments _____

Initials: MCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Date 7/20/78
Area EASTERN GULF OF MEXICO Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished STANDING BY ON WEATHER & NAVIGATION MECHANICALS

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expense _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expense _____

Weather POOR/MARGINAL

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep KRAN Project 41069A
Area EASTERN GULF OF MEXICO - AREA #2 Date 7/21/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	<u>12</u>	5. McELMAN	<u>12</u>
2. RESTA	<u>12</u>	6. MEES (ON SHORE)	
3. BURKE	<u>12</u>	7. _____	
4. GALLARDE	<u>12</u>	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. NES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 18 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather MARGINAL/BAD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep _____ Project 41069A
Date 7/22/78
Area EASTERN GULF OF MEXICO Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	8
2. RESTA	8	6. MEES (ON SHORE)	
3. BURKE	8	7. _____	
4. GALLARDE	8	8. _____	

Time Start Work Day 0000
Time End Work Day 1800

Time Boat Leaves Dock _____
Time Boat Ties Up 0100

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Man 2
2. M/V SEA TRANSPORTER No. of Man 6

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished RESUPPLY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH ON HAND	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather MARGINAL/BAD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep _____ Project 41069A
Date 7/23/78
Area EASTERN GULF OF MEXICO - AREA #2 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0600
Time End Work Day 2400

Time Boat Leaves Dock 0600
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM	3. ONAN GENERATOR
2. MES SYSTEM	4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM	3. SEA MAC 500
2. EDO 4034 CM	4. _____

Expendables/Spares Consumed

1. _____	3. _____
2. _____	4. _____

Equipment Lost

	Reason
1. _____	_____
2. _____	_____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS	No. of Men <u>2</u>
2. M/V SEA TRANSPORTER	No. of Men <u>7</u>

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 16 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather MARGINAL

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep _____ Project 41069A
Date 7/24/78
Area EASTERN GULF OF MEXICO - AREA #2 Supervisor BEER

Field Personnel

NAME	HOURS
1. BEER	12
2. RESTA	12
3. BURKE	12
4. GALLARDE	12

NAME	HOURS
5. McELMAN	12
6. MEES (ON SHORE)	
7.	
8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

1. _____
2. _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 47 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR/POOR

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep - Project 41069A
Date 7/25/78
Area EASTERN GULF OF MEXICO - AREAS 2 & 3 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished AREA 2 - 15 LINE MILES
AREA 3 - 32 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expense _____

Total Credit Expenses _____

Weather FAIR

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep - Project 41069A
Date 7/26/78
Area EASTERN GULF OF MEXICO - AREA #3 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM	3. ONAN GENERATOR
2. MES SYSTEM	4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM	3. SEA MAC 500
2. EDO 4034 CM	4. _____

Expendables/Spares Consumed

1. _____	3. _____
2. _____	4. _____

Equipment Lost

Equipment Lost	Reason
1. _____	_____
2. _____	_____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS	No. of Men <u>2</u>
2. M/V SEA TRANSPORTER	No. of Men <u>7</u>

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 30 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

CREDIT/CHEQUE ITEM	CARD OR FIRM	AMOUNT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR - MARGINAL/BAD

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep - Project 41069A
Area EASTERN GULF OF MEXICO Date 7/27/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 1800

Time Boat Leaves Dock _____
Time Boat Ties Up 1600

WCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished DOWN TO WEATHER/NAV. MECHANICALS

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH ON FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather MARGINAL/BAD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 7/28/78
Area EASTERN GULF OF MEXICO Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	8	5. McELMAN	8
2. RESTA	8	6. MEES (ON SHORE)	
3. BURKE	8	7. _____	
4. GALLARDE	8	8. _____	

Time Start Work Day 0800
Time End Work Day 2400

Time Boat Leaves Dock 1915
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

1. _____
2. _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished REPAIR BOAR EQUIPMENT/RESUPPLY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR/BAD

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO - AREA #4 Date 7/29/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 18 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 7/30/78
Area EASTERN GULF OF MEXICO - AREA #4 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM	3. ONAN GENERATOR
2. MES SYSTEM	SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM	3. SEA MAC 500
2. EDO 4034 CM	4. _____

Expendables/Spares Consumed

1. _____	3. _____
2. _____	4. _____

Equipment Lost

Equipment Lost	Reason
1. _____	_____
2. _____	_____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS	No. of Men <u>2</u>
2. M/V SEA TRANSPORTER	No. of Men <u>7</u>

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 36 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR/BAD

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
 Date 7/31/78
 Area EASTERN GULF OF MEXICO - AREA #4 Supervisor BEER

Field Personnel

NAME	HOURS
1. BEER	12
2. RESTA	12
3. BURKE	12
4. GALLARDE	12

NAME	HOURS
5. McELMAN	12
6. MEES (ON SHORE)	
7.	
8.	

Time Start Work Day 0000
Time End Work Day 2400

AT SEA

Time Boat Leaves Dock _____
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM

2. EDO 4034 CM

3. SEA MAC 500

Expendables/Spares Consumed

1. _____

2. _____

3. _____

4. _____

Equipment Lost

1. _____
2. _____

Reason

[illegible]

Floating Equipment

Subcontractors

1. DECCA SURVEYORS	No. of Men	2
2. M/V SEA TRANSPORTER	No. of Men	7

Rental Vehicles 1. _____ 2. _____
Personal Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____
Work Accomplished 45 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM		AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses

Total Credit Expenses _____

Weather **FAIR/BAD**

Comments

Initials: WCC _____ Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 8/01/78
Area EASTERN GULF OF MEXICO - AREA #4 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7.	
4. GALLARDE	12	8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 45 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: MCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 8/02/78
Area EASTERN GULF OF MEXICO - AREA #5 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 30 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: MCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO - AREA #5 Date 8/03/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	<u>12</u>	5. McELMAN	<u>12</u>
2. RESTA	<u>12</u>	6. MEES (ON SHORE)	<u> </u>
3. BURKE	<u>12</u>	7. <u> </u>	<u> </u>
4. GALLARDE	<u>12</u>	8. <u> </u>	<u> </u>

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4.

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished 90 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

Total Cash Expenses

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Credit Expenses

Weather GOOD

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO Date 8/04/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0600
Time End Work Day 2200

Time Boat Leaves Dock _____
Time Boat Ties Up 1030

WCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished MAINTENANCE & REPAIR; RESUPPLY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	
6. _____	
7. _____	
8. _____	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Project 41069A

Client BLM Rep _____

Date 8/05/78

Area EASTERN GULF OF MEXICO - AREA #6

Supervisor BEER

Field Personnel

NAME	HOURS
1. BEER	12
2. RESTA	12
3. BURKE	12
4. GALLARDE	12

NAME	HOURS
5. McELMAN	12
6. MEES (ON SHORE)	
7.	
8.	

Time Start Work Day 0500
Time End Work Day 2400

Time Boat Leaves Dock 0510
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 6 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO - AREA #6 Date 8/06/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000 Time Boat Leaves Dock AT SEA
Time End Work Day 2400 Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 54 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____ Total Credit Expenses _____

Weather GOOD/FAIR

Comments _____

Initials: MCC _____ Client _____

GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
 Area EASTERN GULF OF MEXICO Date 8/07/78
 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
 Time End Work Day 2400

Time Boat Leaves Dock AT SEA
 Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
 2. MES SYSTEM

3. ONAN GENERATOR
 4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
 2. EDO 4034 CM

3. SEA MAC 500
 4. _____

Expendables/Spares Consumed

1. _____
 2. _____

3. _____
 4. _____

Equipment Lost

1. _____
 2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
 2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 78 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather MARGINAL

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 8/08/78
Area EASTERN GULF OF MEXICO - AREAS 6 & 7 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7.	
4. GALLARDE	12	8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 60 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO -- AREA #8 Date 8/09/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 82 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	
6. _____	
7. _____	
8. _____	

CREDIT/CHARGE ITEM	CASH ON FIRM	AMOUNT
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD/FAIR

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO AREAS 8-9 Date 8/10/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. _____	_____
3. BURKE	12	7. _____	_____
4. GALLARDE	12	8. _____	_____

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM SYSTEM
2. RAYTHEON APHTHOMETER

3. _____
4. _____

Rental Equipment

1. KLEIN 530
2. EDO 4034

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 26 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD / FAIR

Comments _____

GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
 Area EASTERN GULF OF MEXICO - AREA #9 Date 8/11/78
 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
 Time End Work Day 2400

Time Boat Leaves Dock AT SEA
 Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
 2. MES SYSTEM
 3. ONAN GENERATOR
 4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
 2. EDO 4034 CM
 3. SEA MAC 500
 4. _____

Expendables/Spares Consumed

1. _____
 2. _____
 3. _____
 4. _____

Equipment Lost

1. _____
 2. _____
 Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
 2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 90 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather FAIR/MARGINAL

Comments _____

Initials: WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BIM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO - AREA 9 & 10 Date 8/12/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7. _____	
4. GALLARDE	12	8. _____	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIBOOM
2. MES SYSTEM
3. ONAN GENERATOR
4. SUPPORT ELECTRONICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM
3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____
3. _____
4. _____

Equipment Lost

1. _____
2. _____
Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 66 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather GOOD

Comments _____

Initials: MCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Date 8/13/78
Area EASTERN GULF OF MEXICO - AREA #10 Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. BEER	12	5. McELMAN	12
2. RESTA	12	6. MEES (ON SHORE)	
3. BURKE	12	7.	
4. GALLARDE	12	8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

MCC Equipment

1. UNIDOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4. _____

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished 78 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather GOOD

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep DEWALD Project 41069A
Area EASTERN GULF OF MEXICO Date 8/14/78
Supervisor BEER

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>BEER</u>	<u>12</u>	5. <u>McELMAN</u>	<u>12</u>
2. <u>RESTA</u>	<u>12</u>	6. <u>MEES (ON SHORE)</u>	<u> </u>
3. <u>BURKE</u>	<u>12</u>	7. <u> </u>	<u> </u>
4. <u>GALLARDE</u>	<u>12</u>	8. <u> </u>	<u> </u>

Time Start Work Day 0000
Time End Work Day 2200

Time Boat Leaves Dock
Time Boat Ties Up 2130

MCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. SUPPORT ELECTORNICS

Rental Equipment

1. KLEIN 530 SYSTEM
2. EDO 4034 CM

3. SEA MAC 500
4.

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished 36 LINE MILES

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Cash Expenses

Total Credit Expenses

Weather GOOD

Comments

Initials: MCC Client



3.4 Instrumentation Log



WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 1
CLIENT BLM

DATE 7/16/78 - 7/17/78

PAGE 1

OPERATOR RESTA

PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
106	-3	0228	100	10	3	-	300	40	400/4	+	150	60	15/33	5	3'	SS Range in meters	
	36											110				SS layback in feet	
	138	0514														UNIBOOM layback	
																= 65'	
																Echo sounder scale	
105	138	0603	100	10	3	-	300	40	400/4	+	150	110	15/33	5	4'	in meters	
	12											100					
	6											80					
	1	0853															
104	1	0913	100	10	3	-	300	40	400/4	+	150	80	15/33	5	2'		
	19											100					
	85											110					
	134	1111															
103	134	1125	100	10	3	-	300	40	400/4	+	150	110	15/33	5	2'		
	116	1155														Abort line	
	134	1435										140				Restart line	
	121											110					
	50											75					
	35	1700														Nav down	
	52	0352										80				7/17 on line	
	28											110					
	5											70					
	-1	0455															

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 1
CLIENT BLM

DATE 7/17 - 7/19/78

PAGE .2

OPERATOR RESTA

PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
102	-1	0508	100	10	3	-	300	40	400/4	+	150	80	15/33	5	2'	7/17	
	36											110					
	125	0700														Abort Nav	
	123	0746														Continue	
	134	0756															
101	-1	1750	100	10	3	-	300	40	400/4	+	100	110	15/33	5	3'	7/18	
	6											90					
	9											60					
	17											80					
	32											100					
	78											110					
	90	1950														Echo sounder off	
	95															" " on	
	134	2036															
208	38	2106	100	10	3	-	300	40	400/4	+	100	120	15/33	5	3'		
	27	2120										110					
	10	2145										100					
	4															Abort	
	8	2321										80				On line	
	1	2335															
207	1	2357	100	10	3	-	300	40	400/4	+	100	110	15/33	5	4'	7/19	
	39	0035															

AREA 1 DATE 7/19/78 PAGE 3
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

[illegible]

WOODWARD-CLYDE CONSULTANTS

AREA 2

DATE 7/21/78 - 7/23/78

PAGE 4

EASTERN GULF OF MEXICO

CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

MARINE HABITAT SURVEY

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
112	70	0922	100	10	3	-	600	60	300/4	+	100	250	30/66	5	6'	MES system	
	62											270				2 arrays @	
	2											250				300 each	
	1	1027															
111	1	1122	100	10	3	-	600	60	300/4	+	100	180	30/66	5	6'	MES	
	13											160					
	50											200					
	65											250					
	70	1246															
110	70	1323	100	10	3	1/2	600	60	300/4	+	100	300	30/66	5	7'	MES	
	61											350					
	53											375					
	26											350					
	1	1419															
																7/22 down-weather	
109	1	1742	100	10	3	1/2	300	60	500/3	+	100	160	30/66	5	4'	7/23 UNIBOOM	
	3															Abort Nav	
	70	1941										360				Begin line	
	56											340					
	40											320					
	36	2025										260					
	12											225					
	1	2103															

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 2

DATE 7/23/78-7/24/78

PAGE 5

CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

[illegible]

MARINE HABITAT SURVEY

AREA 2

DATE 7/24/78

PAGE · 6

CLIENT BLM

OPERATOR	RESTA
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
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16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
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39	39
40	40
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51	51
52	52
53	53
54	54
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57	57
58	58
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60	60
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62	62
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65	65
66	66
67	67
68	68
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71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

PROJ. NO. 41069A

[illegible]

OPERATOR RESTA PROJ. NO. 41069A

OPERATOR RESTA PROJ. NO. 41069A

MARINE HABITAT SURVEY

AREA 3

DATE 7/25/78

PAGE . 8

CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

[illegible]

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3

DATE 7/25 - 7/26/78

PAGE 9

CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

			UNIDOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
109	1	2009	100	10	3	3/4	600	60	250/1	+	100	510	60/96	5	2		
	40											560					
	45											660					
	61											730					
	70	2116															
108	70	2138	100	10	3	1	600	60	250/1	+	100	760	60/96	5	2		
	40					3/4						660					
	33											610					
	1	2248															
107	1	2306	100	10	3	3/4	600	60	250/1	+	100	450	60/96	5	2		
	28	2335														Abort Nav	
107	70	1536	100	10	3	1 1/4	600	60	250/1	+	100	810	90/126	5	2	7/26/78	
	38					1							60/96				
	65											760					
	37					3/4											
	29											710					
	24											630					
	1	1641													4		
201	33	1718	100	10	3	3/4	600	60	250/1.5	+	100	610	60/96	5	4	Following seas	
	34											560					
	59								250/2								
	66								250/1.5	+							
	70	1757															

WOODWARD-CLYDE CONSULTANTS

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEYAREA 3DATE 7/26/78PAGE 10CLIENT BLMOPERATOR RESTAPROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR		SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE	CABLE OUT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
202	70	1820	100	10	3	3/4	600	60	250/1.5	+	100	510	60/96	5	2'	
	33	1853														
106	33	1933	250	10	3	3/4	600	60	250/1.5	+	100	460	60/96	5	2	
	46											510				
	47											570				
	71												90/126			
	74											650				
	76											760				
	89											810				
	91												120/156			
	93											960				
	95											1150				
	96		500										150/186			
	97											1250				
	99											1350				
	101											1450				
	103											1600				
	106											1720	80/210			
	108											1810				
	110											1960				
	113											2070				
	115											2180				
	118											2330				
	120				2							2480				
	122											2600				
	123											2675				
	125										150					

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PROJ. NO. 41069A

SEE NOTES

REMARKS

Depth Sounder off
scale

7/27 Nav down
thunderstorms
proceeded to
Area 4

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3 DATE 7/23/78 PAGE 12
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
																Remainder of Area 3 surveyed on 8/23 & 8/24	
101	33	1326	250	10	2	-	500	20	150/1.5	+	150	410	100/155	4	4'	MES System	
	38											560	X2			Raytheon 719B	
	42											660					
	43												150/205				
	46										100		X2				
	50											710					
	54											760					
	64											860					
	67											910					
	70					2										Off depth sounder	
	73											960				Scale	
	77											1180					
	83											1240					
	87											1360					
	89											1480					
	94											1600					
	102											1960					
	110											2480					
	116				3	3						2720					
	120										150					22 off cable	
	130															limit	
	134	1528															
208	1	1601	250	10	3	3	500	20	175/1	+	150	2900	Off	4	6'	No SS, DS, SP	
	36															1-36 deep water	
	41				2	2											

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3

DATE 7/23/78

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CLIENT BLM

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PROJ. NO. 41069A

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WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3
CLIENT BLM

DATE 7/23 - 7/24/78 PAGE 14
OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR		SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
205	38	2239	250	10	2	2	500	700	150/1.5	+	150	610	150/205	5	3'	
	36											710	X2			
	29											810				
	23											760				
	12											810				
	5											910				
	1	2326														
204	1	2345	250	10	2	2	500	20	150/1.5	+	150	1050	150/205	5	4'	
	6											1000	X2			
	8											960				
	11				2	1										
	13											860				
	29											810				
	44											860	100/155			
	54											810	X2			
	70	0117														8/24
203	70	0153	250	10	2	1	500	20	150/1.5	+	150	400	100/155	4	4'	
	66										100		X2			
	57											460				
	52											510				
	35											610				
	26											710				
	20											760				
	18												150/205	5		
	1	0314											X2			

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3

DATE 7/24/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

			UNIDOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
102	33	0349	250	10	2	1	500	20	150/1.5	+	150	510	100/15	4	4'		
	36											610	X2				
	40											760	150/20	5	5		
	44											810	X2				
	56											860					
	61											910					
	63											1010					
	70		250	10	2	2						1050					
	77											1160	Off			Depth sounder off scale	
	81											1410					
	88											1560					
	94											1910					
	100											2160					
	103											2260					
	105											2610					
	110											2900				SS cable out full	
	117		250	10	3	3					200						
	134	0528															
103	134	0544	250	10	3	3	500	620	150/1.5	+	200	2900	Off	4	5'		
	119		250	10	2	2											
	106											2800					
	104											2500					
	100											2350					
	97											2000					
	90											1650					
	82											1250					
	75											1100					
	61											810					
	50											710					

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3

DATE 7/24/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

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MARINE HABITAT SURVEY

AREA 3

DATE 7/24/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

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EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 3

DATE 7/24/78

PAGE 18

CLIENT BLM

OPERATOR	RESTA
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PROJ. NO. 41069A

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AREA 3 DATE 7/24/78 PAGE 19
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

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MARINE HABITAT SURVEY

AREA 4

DATE 7/29/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

[illegible]

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 4

DATE 7/29 - 7/30/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

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WOODWARD-CLYDE CONSULTANTS

AREA 4

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EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR		SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
111	102	0301	250	10	2	2	500	20	400/2	-	100	760	90/126	5	4'	Uniboom
	101		250	10	2	1										4100 Recorder
	79												60/96			Edge key
	70											710				
	66											660				
	61											610				
	60											560				
	54											510				
	13											460				
	11											410				
	1	0531														
110	1	0551	250	10	2	1	500	20	400/2	+	100	460	60/96	5	3'	
	4											510				
	9											560				
	18											610				
	45											660				
	70	0700										760				
	84											820				
	96											890				
	101											940				
	102	0800														
109	102	0821	250	10	2	1	500	20	400/2	+	100	630	90/126	5	2'	
	95												60/96			
	88											560				
	86											610				

about Nav

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 4 DATE 7/30 - 7/31/78 PAGE 23
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR		SEE NOTES				
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE	CABLE OUT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
109	85	0943	250	10	2	1	500	20/140	400/2	+	100	510	60/96	4	2'	Continue	
	82											560					
	81											610					
	48											560					
	1	1134														To Panama City parts for Nav	
108	1	0921	250	10	2	1	800	600	250/1.5	+	100	450	60/96	5	4'	MES System	
	6											560				4100 Recorder	
	7											610				7/31/78	
	9											660					
	22											710					
	66											760					
	90											810					
	96											860					
	98												90/126				
	99											910					
102	1037																
107	102	1110	250	10	2	1	500	600	250/1.5	+	100	660	60/96	5	2'	Uniboom	
	60					1/2										255 Recorder	
	13					1/4											
	1	1303															
106	33	1346	250	10	2	1	500	20/140	400/1.5	+	100	660	60/96	5	2'	Nav down	
	37															Restart line	
	33	1710										560					
	60														4'		
	102	1829															

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PROJ. NO. 41069A

[illegible]

MARINE HABITAT SURVEY

PROJ. NO. 41069A

[illegible]

MARINE HABITAT SURVEY

4

DATE 8/1/78

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CLIENT BLM

OPERATOR RESTA

PROJ. NO. 41069A

[illegible]

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 5 DATE 8/2 - 8/3/78 PAGE 27
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY									SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS		
		1515														Lead line calibration		
201	33	1607	100	10	3	0	300	60	400/2	+	100	70	15/33	5	calm	uniboom w/		
	52					1/4										255 Recorder		
	102	1714																
202	102	1723	100	10	3	1/4	300	60	500/2	+	100	70	15/33	5	calm			
	33	1831																
203	33	1840	100	10	3	1/4	300	60	500/2	+	100	70	15/33	5	calm	Add lm to		
	102	1943														depth to correct		
																for draft		
204	102	1953	100	10	3	1/4	300	60	500/2	+	100	70	15/33	5	calm	Draft corrected		
	40					0												
	33	2102																
205	33	2222	100	10	3	0	300	60	500/2	+	100	70	15/33	5	1'			
	45															Hydrophone skipping		
	61					1/4												
	102	2326																
206	102	2357	100	10	3	1/4	300	60	500/2	+	100	70	15/33	5	3'			
	64															SS record missed		
	33	0100														paper change		
																8/3/78		
207	1	0144	100	10	3	0	300	60	500/2	+	100	70	15/33	5	3'			
	48						400											
	60						600											
	66						400											
	79															Paper problems		
	102	0321																

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 5

DATE 8/3/78

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CLIENT BLM

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PROJ. NO. 41069A

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AREA 5 DATE 8/3/78 PAGE 29
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

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MARINE HABITAT SURVEY

PROJ. NO. 41069A

[illegible]

AREA 6A DATE 8/6/78 PAGE 31
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

[illegible]

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 6B DATE 8/6/78 PAGE 32
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY									SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS		
102	1	0601	100	10	6	3/4	600	60	400/2	+	100	550	200/310	5	1'			
	8											610						
	38	0651																
101	1	1047	100	10	6	3/4	600	60	400/2	+	100	610	200/310	5	1'			
	4											660						
	5											710						
	7					1												
	38	1123																
205	1	1235	100	10	6	1	600	60	400/2	+	100	560	200/310	5	1'			
	4											610						
	11											660						
	38	1314																
204	38	1345	100	10	6	1	600	60	400/2	+	100	610	200/310	5	2'			
	36											660						
	1	1424																
203	1	1455	100	10	6	3/4	600	60	400/2	+	100	610	200/310	5	3'			
	15					1												
	38	1538																
202	38	1549	100	10	6	1	600	60	400/2	+	100	660	200/310	5	3'			
	5					3/4												
	1	1625																
201	1	1647	100	10	6	3/4	600	60	400/2	+	100	560	200/310	5	2'			
	20																	

AREA 6C DATE 8/6 - 8/7/78 PAGE 33
CLIENT BLM OPERATOR RESTA PROJ. NO. 41069A

[illegible]

MARINE HABITAT SURVEY

AREA 6C

DATE 8/7/78

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WOODWARD-CLYDE CONSULTANTS

EASTERN GULF OF MEXICO

MARINE HABITAT SURVEY

AREA 7

DATE 8/7 - 8/8/78

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PROJ. NO. 41069A

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MARINE HABITAT SURVEY

PROJ. NO. 41069A

[illegible]

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 6C
CLIENT BLM

DATE 8/8/78 PAGE 38
OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE CHL FT	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS	
104	38	1357	100	10	6	1	600	60	400/2	+	100	760	200/310	5	3'		
	36											810					
	1	1431															
103	1	1455	100	10	6	1	600	60	400/2	+	100	510	200/310	5	3'		
	5											560					
	6											610					
	10											560					
	11											510					
	12											460					
	13											410					
	26											460					
	38	1548															
102	38	1611	100	10	6	1	600	60	400/2	+	100	810	200/310	5	3'		
	38											860					
	19											810					
	1	1646															
101	1	1710	100	10	6	1	600	60	400/2	+	100	560	200/310	5	3'		
	3											510					
	4											610					
	10											660					
	18											710					
	33												300/410				
	34											760					
	38	1749															

AREA 8 DATE 8/8 - 8/9/78 PAGE 39
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

[illegible]

MARINE HABITAT SURVEY

PROJ. NO. 41069A

[illegible]

AREA 8 DATE 8/9 - 8/10/78 PAGE 41
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

[illegible]

EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA

9

DATE 8/10 - 8/11/78

PAGE 42

CLIENT

BIM

OPERATOR	RESTA
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98	98
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100	100

PROJ. NO. 41069A

[illegible]

AREA 9 DATE 8/11/78 PAGE 43
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR		SEE NOTES			
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
106	38 35	0943	100	10	6	1/2	600	40	400/2	+	100	310 360	100/210	5	4'	
	1	1019														
105	1 2 7 38	1037	100	10	6	1/2	600	40	400/2	+	100	410 360 310	100/205	5	3'	
		1117														
207	33 102	1130 1235	100	10	6	1/2	600	40	400/2	+	100	410	100/205	5	3'	
208	102 98 86 33	1251	100	10	6	1/2	600	40	400/2	+	100	310 285 260	100/205	4	2'	
		1413														
209	33 102	1533 1643	100	10	6	1/2	600	40	400/2	+	100	360	100/205	5	3'	
210	102 100 33	1656	100	10	6	1/2	600	40	400/2	+	100	360 335	100/205	5	3'	
211	33 74 102	1834	100	10	6	1/2	600	40	400/2	+	100	310 360	100/205	5	1'	
212	102 33	1951 2102	100	10	6	1/2	600	40	400/2	+	100	360	100/205	5	1'	

WOODWARD-CLYDE CONSULTANTS
EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

AREA 9

DATE 8/11 - 8/12/78 PAGE 44

CLIENT BLM

OPERATOR RESTA

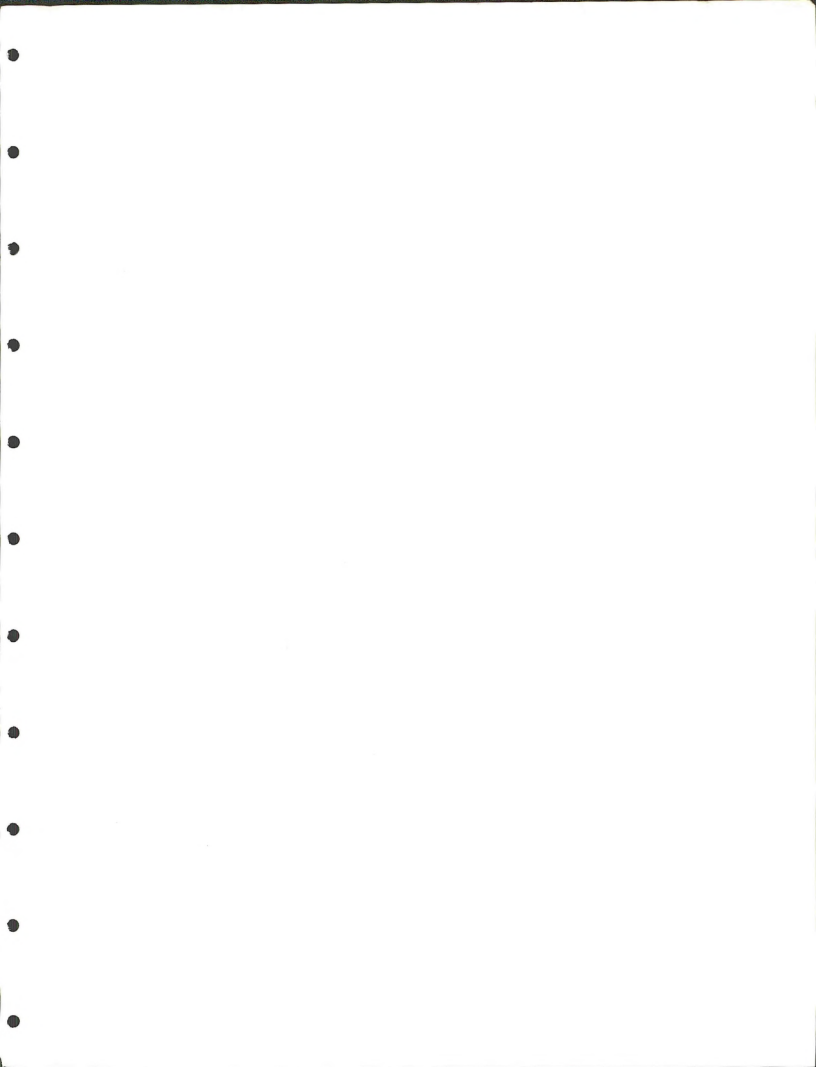
PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES		
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
104	70	2128	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	1	2235														
103	1	2256	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	7											310				
	70	0002														
213	65	0023	100	10	6	1/2	600	40	400/2	+	100	310	100/210	5	1'	
	102	0104														
214	102	0115	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	65	0151														
215	65	0203	100	10	6	1/2	600	40	400/2	+	100	310	100/210	5	1'	
	102	0243														
216	102	0254	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	65	0331														
217	65	0342	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	102	0420														
218	102	0431	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	
	65	0508														
102	102	0535	100	10	6	1/2	600	40	400/2	+	100	360	100/210	4	1'	
	1	0719														
101	1	0739	100	10	6	1/2	600	40	400/2	+	100	360	100/210	5	1'	

AREA 10 DATE 8/12 - 8/13/78 PAGE 45
CLIENT BIM OPERATOR RESTA PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES		
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FE	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
201	70	1732	100	10	6	1/2	600	60	400/2	+	100	410	100/210	5	1'	
	1	1843														
203	1	1857	100	10	6	1/2	600	60	400/2	+	100	310	100/210	5	1'	
	70	2003														
205	70	2018	100	10	6	1/2	600	60	400/2	+	100	360	100/210	5	1'	
	46											410				
	1	2128														
207	1	2142	100	10	6	1/2	600	60	400/2	+	100	360	100/210	5	1'	
	70	2247														
209	70	2303	100	10	6	1/2	600	60	400/2	+	100	360	100/210	5	1'	
	1	0011														
211	1	0025	100	10	6	1/2	600	60	400/2	+	100	410	100/210	5	1'	
	59											435				
	61											460				
	70	0129														
213	70	0147	100	10	6	3/4	600	60	400/2	+	100	410	100/210	5	1'	
	55											385				
	1	0256														
215	1	0312	100	10	6	3/4	600	60	400/2	+	100	385	100/210	5	1'	
	16											410				
	30	0335														
	28	0802										410				Navigation down
	70	0837														Navigation operational





EASTERN GULF OF MEXICO
MARINE HABITAT SURVEY

CLIENT BLM

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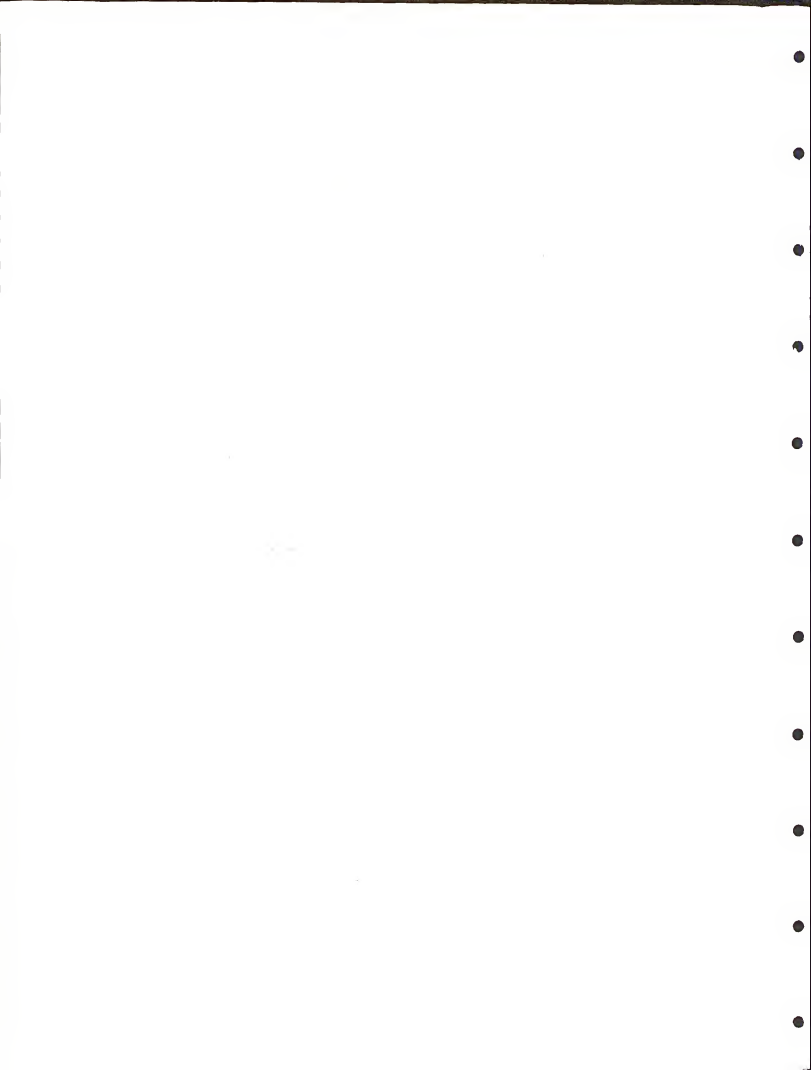
PROJ. NO. 41069A

			UNIBOOM / SPARKARRAY								SIDE SCAN SONAR			SEE NOTES		
LINE NUMBER	FIX	TIME	SCALE (MS)	SCALE LINE INTERVAL	SWPS/KEY	PRINT	ENERGY	GAIN	FILTER	TVG	RANGE M	CABLE OUT FT.	ECHO SOUNDER SCALE	VESSEL SPEED	SEA STATE	REMARKS
217	70 1	0858 1002	100	10	6	3/4	600	60	400/2	+	100	460	100/210	5	1'	
104	102 97 1	1054 1250	100	10	6	1/2	600	60	400/2	+	100	410 360	100/210	5	1'	
103	1 102	1310 1446	100	10	6	1/2	600	60	400/2	+	100	360	100/210	5	1'	
102	102 99 95 94 83 11 1	1505 1645	100	10	6	1/2	600	60	400/2	+	100	410 360 385 410	100/210	5	1'	
101	1 102	1706 1838	100	10	6	1/2	600	60	400/2	+	100	410	100/210	5	2'	
218	70 1	1935 2045	100	10	6	1/2	600	60	400/2	+	100	360	100/210	5	1'	
216	1 28 70	2103 2205	100	10	6	1/2	600	60	400/2	+	100	360 410	100/210	5	1'	

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PROJ. NO. 41069A

[illegible]

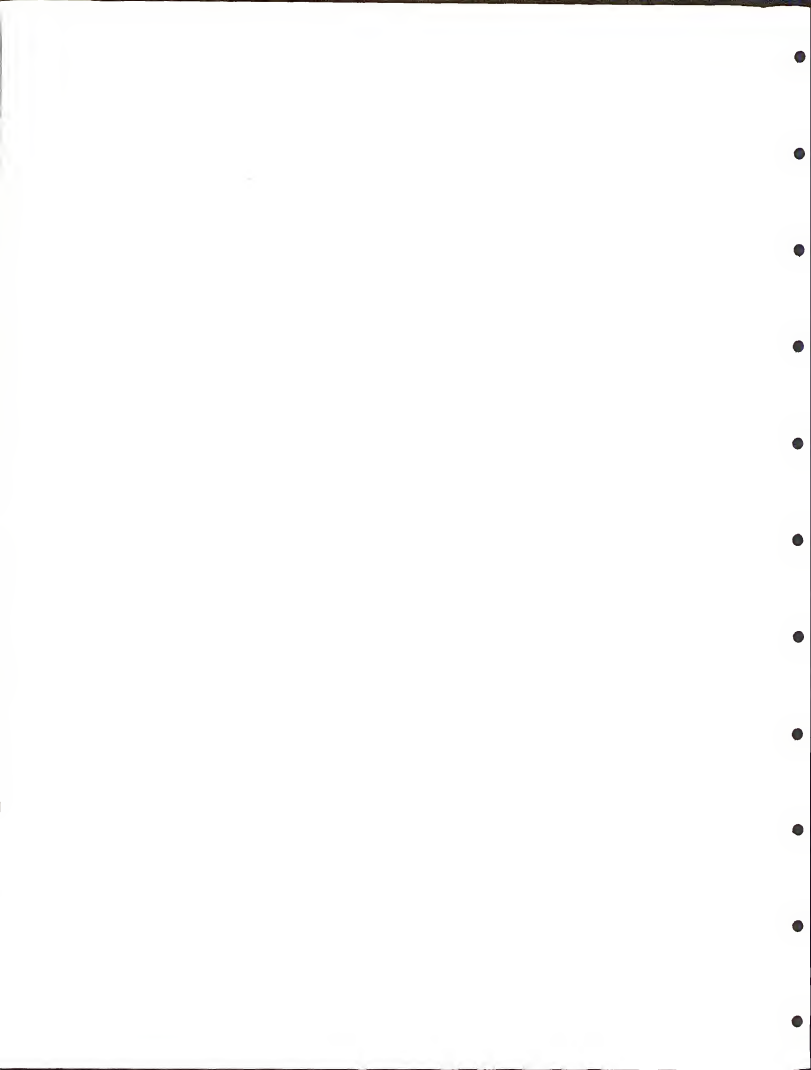


4.0 GROUND TRUTH SURVEY REPORTS

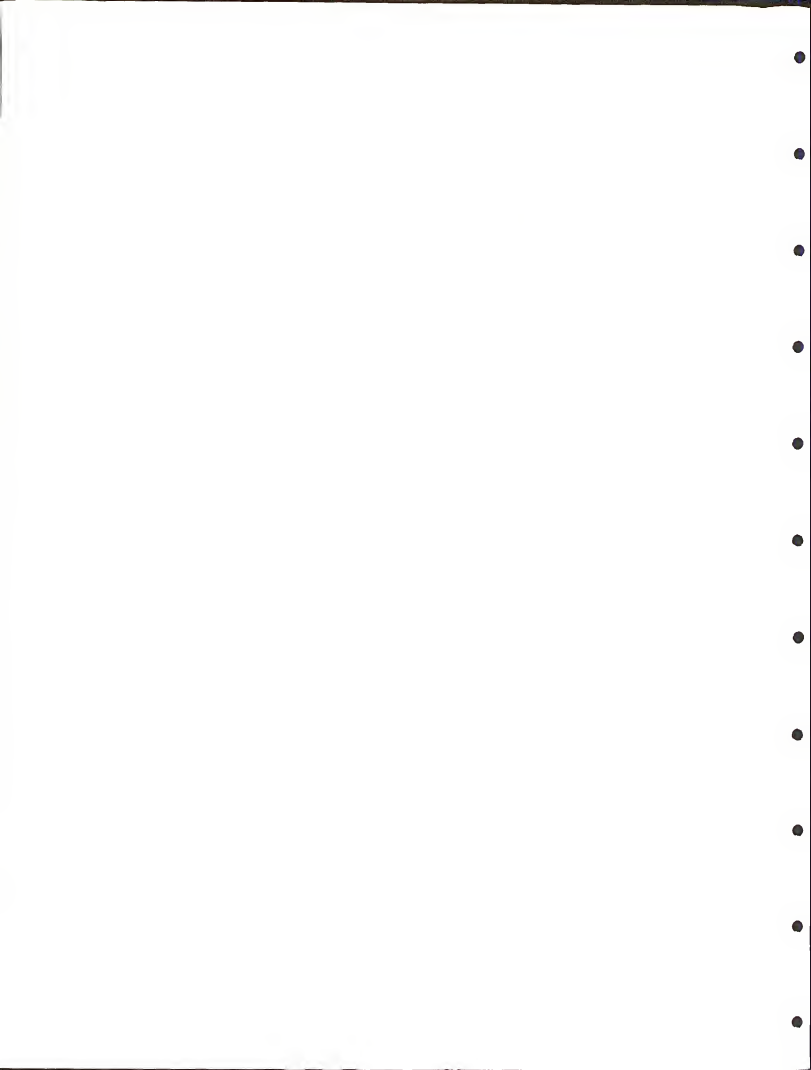
These are four logs which summarize the ground truth survey cruise.

- Chief Scientist's Log (Geomarine Field Report)
- Time Allotment Summary
- Daily Field Report
- Video Log

The Chief Scientists Log is a summary of the days events. It is kept on a time basis for a 24 hour day. The Time Allotment Summary is a table which summarizes the time spent on various work tasks. It is derived directly from the Chief Scientists Log. The Daily Field Report lists the crew, equipment, and subcontractors employed on the project for each day. The Video Log is intended primarily for use as a supplement to the voice track on the video tapes. It is a chronological record of events while the underwater television system was being towed.



4.1 Chief Scientist's Log



GEOMARINE FIELD LOG

Time

2400 Ready to depart St. Petersburg

WCC Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Jim Barkaloo Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-16-78
 Supervisor Bennington

Time:

0012	Leave St. Petersburg dock
0215	Navigation calibration @ pier light
0830	Steering out on vessel
0930	Under way again
1030	Spot radar reflector Area 9 ("Tie into existing buoy")
	Seas ~ 1 ft. running from SE Current from NE
1230	Head to line 201, S.P. 40 for camera deployment
1255	At line 201 S.P. 40 Turn to 180 heading, cut engines.
1305	Begin camera deployment
1335	Camera at bottom
1418	Camera off bottom
1430	Blew fuse on winch in bringin up cameras
1500	On board
~1600	Unload camera, adjust and reload camera deployed & drifting
1658	Camera on board Unload and develop film Select camera calibration
1900	Camera over board
1910	Engage engines enroute to get on line 201 S.P. 16-21
1959	On line 201, head west
2002	Lower camera
2011	Begin monitoring, shot point 3
2056	Pass shot point 27

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BIM Rep Jim Barkaloo Project 41069A
Work Area Eastern Gulf of Mexico Date 8-16-78
Supervisor Bennington

Time:

2100 Camera off bottom

2115 Camera aboard

2220 Course to Area 7

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Jim Barkaloo Project 41069A
Date 8-17-78
Work Area Eastern Gulf of Mexico Supervisor Bennington

Time

0320	Arrive Area 7, deploy buoy
0402	Fix on buoy
0405	Shut down, drifting
0950	Camera in water, off bottom
1007	Begin move to line 205
1028	On line 205. Heading east
1047	Begin recording at S.P. 55
1230	Stop engines. S.P. 0 Camera off bottom
1241	Camera aboard
1250	Begin run to 6A
1415	Arrive Area 6A
1509	Camera over side at shot point -3 on a line perpendicular to line 101 about 50 m south and parallel to shot point line 5.
1538	Begin transect at Shot Point 0
1558	End transect at Shot Point 10
1601	Camera off bottom. Head to 2nd transect of Area 6A
1714	Begin transect west to east along line perpendicular to line 101 of Area 6A and about 50 m north and parallel to shot point line 32. Begin tow at a shot point 0
1728	End of run at shot pt. 11 Turn 180° Camera in tow
1756	Head E to W along same line from pt 11 to pt 0

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BIM Rep Jim Barkaloo Project 41069A
Work Area Eastern Gulf of Mexico Date 8-17-78
Supervisor Bennington

Time

1820 End transect. Camera off bottom
1835 Camera & sled aboard Heading to Area 6B
1915 Arrive Area 6B
2002 Camera over side maneuver to get on line
2050 Begin transect perpendicular to 101 half way between and parallel to
shot point line 25 and 26 running E → W
2121 End transect. Come around 180°
2136 Begin transect along shot point line 25 running W → E
2150 Abort transect. Off course
2158 Begin maneuver to turn 180° and get on east end of shot point line 25
2219 Begin transect along shot point line 25 running E → W accross line 101
2243 End transect line Camera off bottom
2258 Camera on deck
2302 Head to Area 7 for land counts

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Jim Barkaloo Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-18-78
 Supervisor Bennington

Time	
0001	Enroute L/C buoy #7
0103	Arrive buoy
0117	Enroute Area #9
0700	Siminole station off air
0840	Siminole station on air Continue maneuver to Area 9
1000	Seas swells < 1 ft. S → N wind E → W
1000	Fix on Area 9 buoy
	Swells < 1 ft. S → N Wind E → W
1002	Camera Buoy over side
1012	Camera over side
1106	Begin transect fixes running W → E on a line 250' N of line 201 from shot pts. 22-15.
1118	End transect line at shot pt. line 15. Increase speed and maneuver to line 100' S of line 201 along shot pts 8-0.
1128	Begin transect of Southern line W → E.
1143	End W → E transect and make 180° turn to rerun transect.
1203	Begin E → W transect along line 0 to 100 ft. south of line 201. Run shot pt. 0 to 8 Running slightly off course so transect meanders
1230	End transect E → W in Area 9 Camera off bottom
1240	Camera & sled aboard Pick up camera buoy
1303	Enroute to Land Count Buoy
continue	

WCC _____ Client _____

GEOMARINE FIELD LOG

Time:

2205 Arrive Port Manatee dock

WCC	Client
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WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BIM Rep Jim Barkaloo Project 41069A
Work Area Eastern Gulf of Mexico Date 8-19-73
Supervisor Bennington

Time

0000

At Port Manatee dock

1145

Leave Port Manatee dock en route to Panama City

2359

Enroute Panama City

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Jim Barkaloo Project 41069A
Work Area Eastern Gulf of Mexico Date 8-20-78
Supervisor Bennington

Time:

0000

Enroute Panama City

TIME ZONE CHANGE TO CDT

1430

Arrive Panama City dock

1500

BLM observer (Jim Barkaloo) leaves ship

1700

BLM observer (Melissa Smith) aboard

1700

Compressor and winch arrive from Louisiana

1930

Computer arrives. Not functional

2359

At Panama City dock

WCC

Client

GEOMARINE FIELD LOG

Supervisor Bennington

2359 Secure for night in Area 4

WCC	Client
-----	--------

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-22-78
 Supervisor Bennington

Time

0000	Secured for night in Area 4
0600	Seas choppy, 1 ft. SE → NW Wind SE → NW Search for L/C Buoy
	Navigation signal weak
0700	Locate buoy, deploy 2nd L/C Buoy w/radar reflector
0950	Slave station transmitting
1000	Calibrate navigation at L/C Buoy Seas 1 ft. E ↔ W Wind E → W
1025	Navigation lattice run
1051	Begin transect with fathometer Only along W → E line half way between shot point lines 21 and 22 in Area 4 and perpendicular to line 114
1110	Rerun E → W
1131	Camera over side
1222	Begin camera transect run, W → E half way between shot point lines 21 and 22, <u>1</u> line 114 in Area 4
1248	End camera transect Camera in 70W
1333	Begin transect W → E along shot point line 32, <u>1</u> line 114 in Area 4
1345	Hang up camer momentarily on outcrop (≈20 ft)
1409	Camera and bent fram on deck
1423	Repair while enroute to line 108 of Area 4
1520	Frame fixed, TV system operatable
1551	Camera over side
1641	Begin transect 60 m Nof line 108, Area 4, running N → S

continue

WCC _____ Client _____

GEOMARINE FIELD LOG

Time

1806

Camera transect end

1823

Camera system on deck

1953

Camera in water at line 104

2023

Begin transect N → S along line 60 m E of line 104 in Area 4

2109

End transect

2128

Camera system on deck

2128

Head for 4C buoys in Area 4, line 114

2245

Calibration at L/C buoy

2255

Retrieve B07s buoys

2258

Head for Area 3

2330

Stop to work on clutch

2340

Underway

2400

Enroute to Area 3

WCC Client

GEOMARINE FIELD LOG

Project 41069A
 Date 8-23-78
 Supervisor Bennington

Client BLM Rep Mollissa Smith
 Work Area Eastern Gulf of Mexico

Time

0000	Enroute to Area 3
0915	Arrive platform in Area 3 for navigation claibration
0938	Head for north end of Area 3 Swells 3-4 ft. E → W whitecaps
	wind, gusty E → W
1030	Electricity off while work on boat
1050	Arrive north end Area 3
1100	Electricity on
1130	Deploy side scan sonar fish
1135	Deploy sparker; malfunction on board to fix.
1140	Deploy sparker again
1601	Begin E → W transect (Geophysical) of line 208 Area 3
1715	End transect
1749	Begin W → E transect of line 207
1753	Abort transect & retrieve side scan sonar fish
1810	Deploy fish
1834	Begin transect W → E of line 207 Winds less, W → E Seas 3-4 ft swells, less choppy ENE → WSW
2000	End line 207
2125	Begin line 206, Area 3, E → W points 1-38
2205	End line 206
2239	Begin Area 3 line 205, W → E pts. 38-1

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Mellissa Smith Project 41069A
Work Area Eastern Gulf of Mexico Date 8-23-78 Supervisor Bennington

Time

2326

End line 205

2345

Begin Area 3 line 204, E → W pts 1-70

2359

Running Geophysical lines

WCC

Client

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-24-78
 Supervisor Bennington

Time

0000 Running geophysical work on Area 3 line 204 E → W

0017 End line 204

0153 Begin Area 3 line 203, W → E pts 70 - 1

0314 End line 203

0349 Begin area 3 line 102 N → S pts 33-134

0528 End line 201

0544 Begin Area 3 line 103 S → N pts 134-33

~0723 End line 103

0812 Begin Area 3 line 104 N → S pts 33-134

1000 End line 104

1054 Begin Area 3 line 107 S → N pts 134-97

1141 End line 107

1230 Recalibrate navigation at Chevron platform

1233 Head back to Area

1240 Seas E → W 4-6 ft., wind E → W

1307 Begin Area 3, line 109 N → S points 97-134

1400 End line

1423 Begin Area 3, line 111, S → N points 134-97

1512 End line

1530 Begin Area 3, line 112, N → S points 97-134

1545 Seas 3-5 ft. E → W Winds E → W

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
Work Area Eastern Gulf of Mexico Date 8-24-78
Supervisor Bennington

Time

1619

End line

1654

Begin Area 3 line 110 S → N points 134-97

1739

End line

1801

Begin line 108 Area 3, N → S points 97-134

1845

Seas 3-5 ft E → W Winds E → W

1851

End line

1900

End geophysical work Bring up sparker & side scan fish

1915

Sparke & fish aboard Head for Chevron platform for navigation
calibration

1950

Calibrate at platform, Area 3

1955

Maintain boat in area of platform

2359

Maintaining boat in Area 3

WCC

Client

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Mellissa Smith Project 41059A
 Work Area Eastern Gulf of Mexico Date 8-25-78
 Supervisor Bennington

Time

0000 Maintaining boat in platform, Area 3
 0700 Weak navigation signal from shore station. Contacting shore
 personnel
 0720 Pick up navigation signal Recalibrate and head 70 Area
 0730 Seas 1-3 ft, SE → NW Winds SE → NW
 0801 Arrive at line 205, shot points 32-34, Area 3 Camera in water
 0816 Bottom in view, take navigation fix.
 0824 Drifting in area and photographing bottom. Drift 0.75 knots, 210°
 0830 Try maintaining headway in low RPM. Camera bouncing due to swells.
 0846 Camera off bottom
 0907 Camera sled on deck Putting on depressor plates
 0933 Plates on
 0937 Head to line 205 between shot points 32-34, Area 3.
 0955 Camera in water, lowering
 1004 Navigation fix
 1020 Bottom in view
 1030 Begin drift transect, NE → SW @ 210° over line 205, points 32 to 34.
 1048 Engage engines to maintain line
 1049 Drifting while photographing
 1123 Camera off bottom. Head to line 101 of Area 3 with camera in tow.
 To point 67

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-25-78
 Supervisor Bennington

Time

1210 Sled and camera on deck. Towing too slow in present seas.
 1224 Sled on deck
 1225 Navigation fix
 1324 Arrive site
 1332 Camera in water, lowering
 1334 Navigation fix Cable jumps saw
 1350 Repaired, but jumps again change saw
 1400 Drift is now more than 2 knots Decide to run into drift, W → E
 1414 New saw installed Pre plot course
 1430 Underway to Area 3, line 103, points 66 to line 101 point 63
 1526 Arrive in Transect area
 1531 Camera in water
 1554 Bottom in view, maneuver to start
 1605 Seas 2-4, E → W, white caps Winds E → W
 1635 Strong currents preventing us from making headway with one engine at
 550 rpm and camera in tow. Make only 1.5 knots Try 2 engines at
 clutch speed current about 2 knots
 1640 Lose station signal momentarily. Take loran fixes
 1643 Arrive Area 3. Run W → E along shot point line (50 m North of shot
 point line 66) and across line 103. Bottom in view.
 1711 Camera off bottom

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-25-78
 Supervisor Bennington

Time

1728	Sled aboard, head Chevron platform for calibration
1754	Seas 1-3 ft. ESE → WSW Wind ESE → WSW
1815	Navigation signal on
1820	Calibrate at Chevron platform
1825	Head to lines 108 & 106 of Area 3 Shot lines 37-35.
1920	Winds E → W, seas 1-2, E → W. Current SE → NW
1950	Arrive and deploy sled buoy
1954	Camera in water
1956	Take fix & lower sled
2003	Camera down
2009	Begin maneuver to start of W → E transect ½ way between and parallel to shot lines 37 and 38 and run across line 108
2051	Begin transect Encounter outcrops
2107	End transect, camera in tow
2116	Arrive and begin W → E transect of line between shot points 35 and 36 running across line 106.
2120	TV cable off to starboard side due to strong currents from NE Difficulty to maintain heading.
2122	Try headings 85, 75, 55° to try to straighten camera cable No work
2132	Continental Shelf Associate representative believes sled rudder malfunctioning

continue

WCC _____ Client _____

GEOMARINE FIELD LOG

WCC	Client
-----	--------

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BIM Rep Melissa Smith Project 41069A
Work Area Eastern Gulf of Mexico Date 8-26-78
Supervisor Bennington

Time

0000 Maintaining boat in Area 3
0650 Calibrate navigation at Chevron platform
0655 Head for Area 3, line 112, point 97
0720 Seas 1-2 ft., ESE → WNW Winds ESE → WNW
0735 At station, drifting to determine direction and speed OC drift
Very slow to NW
0800 Seas picking up along with wind From SE
0805 Camera in water
0822 Camera down, begin maneuver
0833 Arrive transect, start. Camera at 250' Pinnacle tops at 320'
0845 Maneuvered to south
0900 Cut engines Drift north very irregular bottom Depth @ 365' w/
pinnacles to 320'
0908 Camera to 300'. Cautious. Watching fathometer to keep above peaks
0920 Camera to bottom between areas of relief.
0927 See pinnacles below w/camera
0940 Camera coming up, end transect
0954 Sled on deck
1005 Head to platform for calibration. Area very hazardous. Fortunate
to get good shots from above Have shots of major outcrops from
lines 108, 106, 112

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
 Work Area Eastern Gulf of Mexico Date 8-26-78
 Supervisor Bennington

Time

1005	Calibration fix at Chevron platform, Area 3 Head Area 2
1245	Arrive Area 2
1250	Deploy Lane Count Buoy
1305	Seas 1-3 feet, choppy ESE → WNW Drift is to NW, 0.75 to 1 knot
1322	Head to west end of shot line 67 at line 101 of Area 2
1340	Begin W → E fathometer run looking for outcrops
1353	End fathometer run, head back to transect beginning
1400	Camera in water; lowering
1416	Camera at 200 ft., maneuver to start
1437	Arrive, lower sled to bottom
1441	Begin transect W → E along shot point line 67 across line 101 Area 2
1507	Off bottom, end transect
1518	Camera sled aboard Head north to shot point 52 of line 101, Area 2
1550	Rain
1600	Seas 1-2 ft E → W Wind SE → NW
1607	Camera in water
1622	Camera at 200 feet. Maneuver to transect start
1645	Lower camera to 235 feet
1648	Bottom in view. Begin E → W transect of shot point line 52 across line 101 of Area 2
1716	Tow boat dead ahead, camera off bottom

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 410692
 Work Area Eastern Gulf of Mexico Date 8-26-78
 Supervisor Bennington

Time

1725	Camera coming up
1734	Camera on deck; retrieve buoy
1738	Head to Area 2, line 102, shot point 10
1810	Arrive shot point 10 of line 102
1812	Camera over side. Lower to 150' Maneuver to transect start
1831	Arrive & lower camera to bottom
1832	Begin transect W → E along shot point line 10 across line 201
1853	Camera off bottom at 150'
1853	Tow south. Current during W → E transect pulled sled south of boat so that fathometer did not correlate with sled position. Visibility on bottom very bad 3-5 feet
1923	Head north Lower camera
1924	Bottom in view Begin transect 60 meters east and parallel to line 102 across shot points 12-8
1930	Cut engines. Rate of speed too great with engines engaged Drift over shot points 11, 10, 9
1932	Not drifting due north more NE
1946	Begin receiving bad navigation signals from one station
1949	Camera coming up
1956	Sled on deck
2003	Sled buoy on deck slow speed towards Pensacola while developing slides

continue

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

Client BLM Rep Melissa Smith Project 41069A
Work Area Eastern Gulf of Mexico Date 8-26-78
Supervisor Bennington

Time

2003 to ensure picture coverage of Area 22115 Finished develop Running speed to Pensacola2359 Enroute Pensacola, Fla.

WCC _____ Client _____

WOODWARD-CLYDE CONSULTANTS

GEOMARINE FIELD LOG

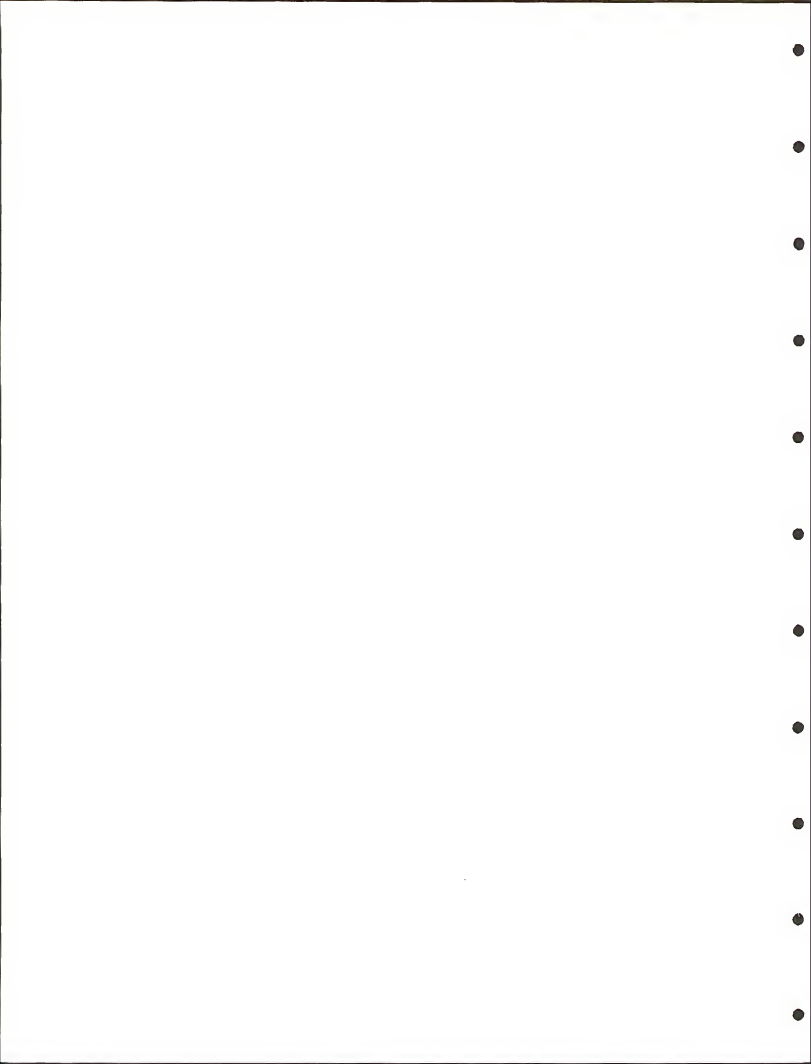
Client BIM Rep Mellissa Smith Project 41069A
Work Area Eastern Gulf of Mexico Date 8-27-78
Supervisor Bennington

Time

0000Enroute Pensacola, Fla.0145Dock A Pensacola, Fla.END OF CRUISE

WCC

Client



4.2 Time Allotment



TABLE OF TIME ALLOTMENT (HOURS)
CRUISE II GROUND TRUTH SURVEY

<u>DESCRIPTION</u> <u>DAY</u>	<u>PORT</u> <u>TIME</u>	<u>TRANSIT</u> <u>TIME</u>	<u>SURVEY*</u> <u>TIME</u>	<u>DOWN</u> <u>TIME</u>
8/15	24			
8/16		11	12	1S
8/17		4	20	
8/18		17	5	2N
8/19	12	12		
8/20	9	15		
8/21	12	12		
8/22		1	23	
8/23		9	13	2S
8/24			24	
8/25			24	
8/26		7	17	
8/27	22	2		
8/28		24 **		
8/29		24 **		
8/30		24 **		

* Includes calibration time and other steaming time within
(but not between) work areas.

** Ship only

DOWN TIME SOURCE

S = SHIP

N = NAVIGATION SYSTEM



4.3 Daily Operational Log



WOODWARD-CLYDE CONSULTANTS
GEOPHYSICAL DAILY FIELD REPORT

Client BLM Rep BARKALOO Project 41069A
Area EASTERN GULF OF MEXICO - ST. PETERSBURG Date 8/15/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)	<u>12</u>	5. PETERSON (CSA)	<u>12</u>
2. McELMAN (WCC)	<u>12</u>	6. AYER (CSA)	<u>12</u>
3. BENNINGTON (TerEco)	<u>12</u>	7. _____	_____
4. RUBRIGHT (TerEco)	<u>12</u>	8. _____	_____

Time Start Work Day _____
Time End Work Day _____

Time Boat Leaves Dock DOCKSIDE
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. RENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished DEMOLIBLZE GEOPHYSICAL SURVEY, MOBILIZE GROUND TRUTH SURVEY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expense _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expense _____

Weather _____

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep BARKALOO Project 41069A
Area EASTERN GULF OF MEXICO - AREA 9 Date 8/16/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)		5. PETERSON (CSA)	
2. McELMAN (WCC)		6. AYER (CSA)	
3. BENNINGTON (TerEco)		7.	
4. RUBRIGHT (TerEco)		8.	

Time Start Work Day 0000
Time End Work Day 2400

Time Boat Leaves Dock 0012
Time Boat Ties Up

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. BENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished AREA 9 LINE 201, TV AND CAMERA SURVEY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Cash Expenses _____

Total Credit Expenses _____

Weather _____

Comments _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep BARKALOO Project 41069A
Area EASTERN GULF OF MEXICO - AREAS 7, 6 Date 8/17/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)	_____	5. PETERSON (CSA)	_____
2. McELMAN (WCC)	_____	6. AYER (CSA)	_____
3. BENNINGTON (TerEco)	_____	7. _____	_____
4. RUBRIGHT (TerEco)	_____	8. _____	_____

Time Start Work Day _____
Time End Work Day _____

Time Boat Leaves Dock AT SEA
Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM	3. ONAN GENERATOR
2. MES SYSTEM	4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM	3. BENTHOS 35mm CAMERA
2. HYDROPRODUCTS TV	4. SEA MAC 500

Expendables/Spares Consumed

1. _____	3. _____
2. _____	4. _____

Equipment Lost

Reason
1. _____
2. _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS	No. of Men	2
2. M/V SEA TRANSPORTER	No. of Men	7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished AREA 7 LINE 205, AREA 6A LINE 101, TV AND CAMERA SURVEY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather _____

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep BARKALOO Project 41069A
Area EASTERN GULF OF MEXICO - AREA 9 Date 8/18/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u>AYER (CSA)</u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day
Time End Work Day

Time Boat Leaves Dock AT SEA
Time Boat Ties Up 2205 PORT MANATEE

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. RENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished AREA 9 LINE 201 TV AND CAMERA SURVEY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Cash Expenses

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE, CONSULTANTS
GECHMARINE DAILY FIELD REPORT

Project 41069A

Client BLM Rep BARKALOO Date 8/19/78

Area EASTERN GULF OF MEXICO - AT SEA Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)		5. PETERSON (CSA)	
2. McELMAN (WCC)		6. _____	
3. BENNINGTON (TerEco)		7. _____	
4. RUBRIGHT (TerEco)		8. _____	

Time Start Work Day _____
Time End Work Day _____

Time Boat Leaves Dock 1145 PORT MANATEE
Time Boat Ties Up AT SEA

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. BENIHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished REPLENISH BOAT FUEL, WATER, FOOD, ENROUTE TO PANAMA CITY

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather _____

Comments AYER DEPARTS

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep BARKALOO-SMITH Project 41069A
Area EASTERN GULF OF MEXICO - PANAMA CITY Date 8/20/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u> </u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day
Time End Work Day

Time Boat Leaves Dock AT SEA
Time Boat Ties Up 1430 PANAMA CITY

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. BENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished TRANSIT TO PANAMA CITY, CHANGE BLM REPS, LOAD NEW WINCH & COMPRESSOR

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

Total Cash Expenses

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client ELM Rep SMITH Project 41069A
Date 8/21/78
Area EASTERN GULF OF MEXICO - AT SEA Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)		5. PETERSON (CSA)	
2. McELMAN (WCC)		6. _____	
3. BENNINGTON (TerEco)		7. _____	
4. RUBRIGHT (TerEco)		8. _____	

Time Start Work Day _____
Time End Work Day _____

Time Boat Leaves Dock 1225
Time Boat Ties Up AT SEA

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. BENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished TRANSIT TO AREA 4

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

Weather _____

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Project 41069A
Date 8/22/78
Supervisor RESTA

Client BLM Rep SMITH
Area EASTERN GULF OF MEXICO - AREA 4

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u> </u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day
Time End Work Day

Time Boat Leaves Dock AT SEA
Time Boat Ties Up

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. BENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished TV AND CAMERA SURVEY AREA 4, TRANSIT TO AREA 3

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Cash Expenses

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep SMITH Project 41069A
Area EASTERN GULF OF MEXICO - AREA 3 Date 8/23/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u> </u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day Time Boat Leaves Dock AT SEA
Time End Work Day Time Boat Ties Up

WCC Equipment

1. <u>UNIBOOM</u>	3. <u>ONAN GENERATOR</u>
2. <u>MES SYSTEM</u>	4. <u>RAYTHEON DE719</u>

Rental Equipment

1. <u>KLEIN 530 SYSTEM</u>	3. <u>RENTHOS 35mm CAMERA</u>
2. <u>HYDROPRODUCTS TV</u>	4. <u>SEA MAC 500</u>

Expendables/Spares Consumed

1. <u> </u>	3. <u> </u>
2. <u> </u>	4. <u> </u>

Equipment Lost

Equipment Lost	Reason
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>

Floating Equipment

Subcontractors

1. <u>DECCA SURVEYORS</u>	No. of Men <u>2</u>
2. <u>M/V SEA TRANSPORTER</u>	No. of Men <u>7</u>

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished GEOPHYSICAL SURVEYING OF LINES NOT RUN IN FIRST CRUISE IN AREA 3

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

Total Cash Expenses

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep SMITH Project 41069A
Area EASTERN GULF OF MEXICO - AREA 3 Date 8/24/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u> </u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day
Time End Work Day

Time Boat Leaves Dock AT SEA
Time Boat Ties Up

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. RENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished GEOPHYSICAL SURVEYING

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Cash Expenses

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep SMITH Project 41069A
Date 8/25/78
Area EASTERN GULF OF MEXICO - AREA 3 Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)		5. PETERSON (CSA)	
2. McELMAN (WCC)		6. _____	
3. BENNINGTON (TerEco)		7. _____	
4. RUBRIGHT (TerEco)		8. _____	

Time Start Work Day _____ Time Boat Leaves Dock AT SEA
Time End Work Day _____ Time Boat Ties Up _____

WCC Equipment

1. UNIBOOM	3. ONAN GENERATOR
2. MFS SYSTEM	4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM	3. RENTHOS 35mm CAMERA
2. HYDROPRODUCTS TV	4. SEA MAC 500

Expandables/Spares Consumed

1. _____	3. _____
2. _____	4. _____

Equipment Lost

1. _____	Reason _____
2. _____	_____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS	No. of Men <u>2</u>
2. M/V SEA TRANSPORTER	No. of Men <u>7</u>

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished TELEVISION AND CAMERA SURVEY AREA 3

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	
6. _____	
7. _____	
8. _____	

Total Cash Expenses _____

CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		

Total Credit Expenses _____

Weather _____

Comments _____

Initials: WCC Client _____

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep SMITH Project 41069A
Area EASTERN GULF OF MEXICO - AREAS 3 & 2 Date 8/26/78
Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. <u>RESTA (WCC)</u>	<u> </u>	5. <u>PETERSON (CSA)</u>	<u> </u>
2. <u>McELMAN (WCC)</u>	<u> </u>	6. <u> </u>	<u> </u>
3. <u>BENNINGTON (TerEco)</u>	<u> </u>	7. <u> </u>	<u> </u>
4. <u>RUBRIGHT (TerEco)</u>	<u> </u>	8. <u> </u>	<u> </u>

Time Start Work Day
Time End Work Day

Time Boat Leaves Dock AT SEA
Time Boat Ties Up

WCC Equipment

1. UNIBOOM
2. MFS SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. RENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1.
2.

3.
4.

Equipment Lost

1.
2.

Reason

Floating Equipment

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. 2.

Personal Vehicles 1. 2.

Work Accomplished TELEVISION AND CAMERA SURVEYING IN AREAS 3 AND 2

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1. <u> </u>	<u> </u>
2. <u> </u>	<u> </u>
3. <u> </u>	<u> </u>
4. <u> </u>	<u> </u>
5. <u> </u>	<u> </u>
6. <u> </u>	<u> </u>
7. <u> </u>	<u> </u>
8. <u> </u>	<u> </u>

Total Cash Expenses

CREDIT/CHARGE ITEM	CASH OR FIRM	AMOUNT
1. <u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>

Total Credit Expenses

Weather

Comments

Initials: WCC Client

WOODWARD-CLYDE CONSULTANTS
GEOMARINE DAILY FIELD REPORT

Client BLM Rep SMITH Project 41069A
Date 8/27/78
Area EASTERN GULF OF MEXICO - PENSACOLA Supervisor RESTA

Field Personnel

NAME	HOURS	NAME	HOURS
1. RESTA (WCC)		5. PETERSON (CSA)	
2. McELMAN (WCC)		6. _____	
3. BENNINGTON (TerEco)		7. _____	
4. RUBRIGHT (TerEco)		8. _____	

Time Start Work Day _____
Time End Work Day _____

Time Boat Leaves Dock AT SEA
Time Boat Ties Up 0145

WCC Equipment

1. UNIBOOM
2. MES SYSTEM

3. ONAN GENERATOR
4. RAYTHEON DE719

Rental Equipment

1. KLEIN 530 SYSTEM
2. HYDROPRODUCTS TV

3. RENTHOS 35mm CAMERA
4. SEA MAC 500

Expendables/Spares Consumed

1. _____
2. _____

3. _____
4. _____

Equipment Lost

1. _____
2. _____

Reason _____

Floating Equipment _____

Subcontractors

1. DECCA SURVEYORS No. of Men 2
2. M/V SEA TRANSPORTER No. of Men 7

Rental Vehicles 1. _____ 2. _____

Personal Vehicles 1. _____ 2. _____

Work Accomplished ENROUTE TO PENSACOLA, DEMOBILIZE SHIP

SUPPLIES AND EXPENSES

CASH ITEM	AMOUNT
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Total Cash Expenses _____

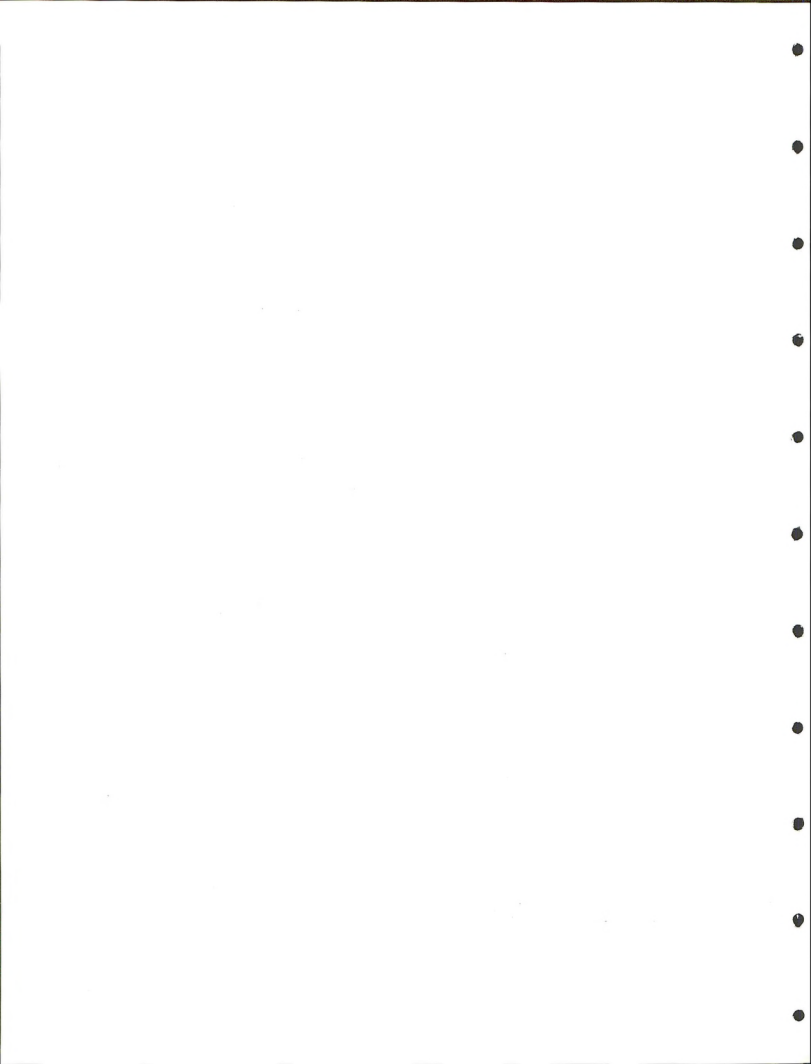
CREDIT/CHARGE ITEM	CARD OR FIRM	AMOUNT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Total Credit Expenses _____

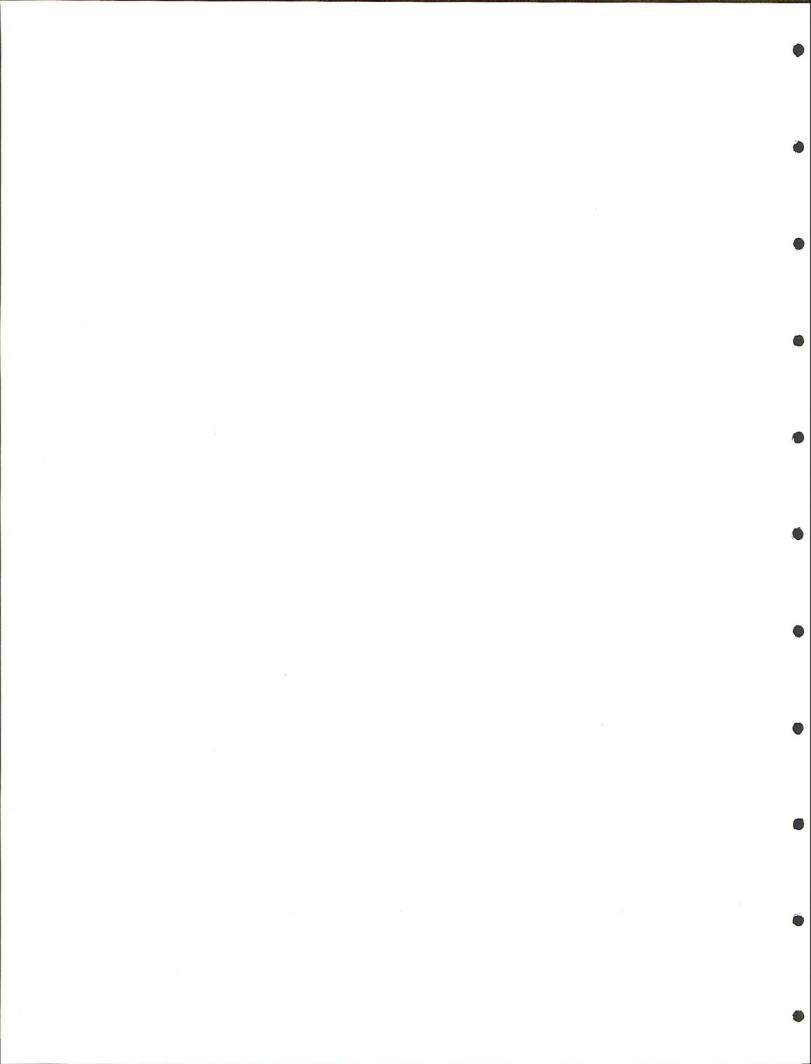
Weather _____

Comments _____

Initials: WCC Client _____



4.4 Video Log Sheets



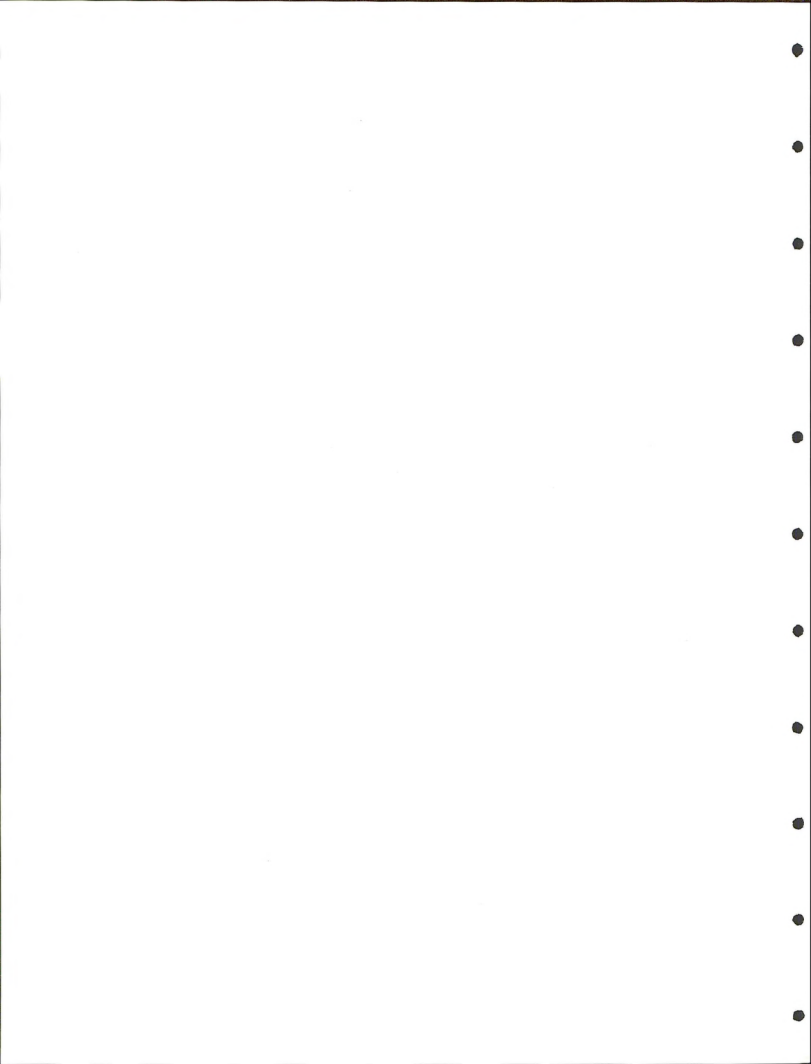
KEY TO VISUAL REFERENCES

Area	Transect	Video Reference		Date	Time	Color	Slide nos.
		Tape no.	Counter range			Transparency (pages)	
9		1	0-1050	8/16/78	1335-1418	1	Camera Calibration Only
9		2	0-1050	8/16/78	1548-1924	2-3	
9		3	0-1050	8/16/78	1927-2031	3	
9		4	0-795	8/16/78	2031-2100	4-6	
7	A-A'	5	364-1045	8/17/78	0950-1117	7-9	(7-1)-(7-11)
7	A-A'	6	0-1053	8/17/78	1118-1223	9-13	(7-12)-(7-33)
7	A-A'	7	0-170	8/17/78	1224-1241	13	(7-34)
6	Block A-A'	7	420-1065	8/17/78	1515-1601	14-15	(6A-1)-(6A-14)
6	567 A-A'	8	0-1050	8/17/78	1605-1714	-	None
6	B-B'	9	0-1061	8/17/78	1714-1819	15-20	(6A-15)-(6A-27)
6	B-B'	10	0-360	8/17/78	1819-1835	20	None
6	Block C-C'	10	360-1026	8/17/78	2004-2054	21	None
6	609 C-C'	11	0-1063	8/17/78	2054-2159	21-23	(6B-1)-(6B-12)
6	C-C'	12	0-819	8/17/78	2200-2302	23-26	(6B-13)-(6B-18)
9	A-A'	13	0-1055	8/18/78	1012-1118	27-28	(9-1)-(9-14)
9	B-B'	14	0-1065	8/18/78	1121-1225	28-33	(9-15)-(9-38)
9	B-B'	15	0-365	8/18/78	1226-1240	33	None
4	A-A'	15	365-1075	8/22/78	1231-1321	34	None
4	A-A'	16*	0-1068	8/22/78	1322-1427	34-36	(4-1)-(4-9)
4	B-B'	17	0-785	8/22/78	1428-1509	36-37	(4-10)-(4-16)
4	C-C'	17	785-1065	8/22/78	1651-1715	-	None
4	C-C'	18	0-1065	8/22/78	1718-1822	38-39	(4-17)-(4-20)
4	C-C'	19	0-1067	8/22/78	1823-2057	39-42	(4-21)-(4-28)
4	D-D'	20	0-1080	8/22/78	2100-2202	42-45	(4-29)-(4-37)
4	D-D'	21	0-561	8/22/78	2203-2214	45	None

KEY TO VISUAL REFERENCES (Continued)

Area	Transect	Video Reference		Date	Time	Color Transparency (pages)	Slide nos.
		Tape no.	Counter range				
3	A-A'	21	561-1087	8/25/78	0901-0940	46	(3-1)
3	A-A'	22	0-122	8/25/78	0942-0946	46	None
3	B-B'	22	564-1092	8/25/78	1055-1135	46-47	(3-2)-(3-6)
3	B-B'	23	092-1192	8/25/78	1137-1244	47-50	(3-7)-(3-11)
3	C-C'	24	0-1060	8/25/78	1302-1514	-	None
3	C-C'	25	0-1089	8/25/78	1631-1736	50	None
3	C-C'	26	0-887	8/25/78	1740-1828	51-52	(3-12)-(3-15)
3	D-D'	26	887-1088	8/25/78	2054-2110	-	None
3	D-D'	27	0-1092	8/25/78	2112-2215	53-54	(3-16)-(3-30)
3	E-E'	28	0-575	8/25/78	2216-2254	55	(3-31)-(3-33)
3	F-F'	28	575-1095	8/26/78	0905-0943	-	None
3	F-F'	29	0-1098	8/26/78	0945-1054	56-57	(3-34)-(3-52)
2	A-A'	30	0-1066	8/26/78	1500-1610	58-61	(2-1)-(2-8)
2	B-B'	31*	0-1070	8/26/78	1614-1807	62-64	(2-9)-(2-11)
2	B-B'	32	0-208	8/26/78	1809-1816	65-67	(2-12)-(2-14)
2	C-C'	32	560-1070	8/26/78	1912-1951	68-70	(2-15)-(2-20)
2	C-C'	33	0-145	8/26/78	1953-1958	71-72	(2-21)-(2-22)
2	D-D'	33	613-1040	8/26/78	2023-2103	72-75	(2-23)-(2-32)

*Blank tape. Record button improperly engaged.



WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Barkaloo Date 8/18/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 9 W → E Transect ≈ 250' N of line 201 between SP 21-15

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1012				13	0	Camera off side
1015						Camera in water
1018						Depth ≈ 180'
1026				320		Bottom in view; drifting
1030				406		Begin maneuver to transect line
1056				806		Begin 1 engine
1057				818		Bottom coming in view
1058	27	1	9-1	828		Bottom coarse
1011		1	9-2	866		hole See lots of polychaets; holes close as we pass
1102		2	9-3	887		Fish swim w/camera
1104		3		900		Whole area of black polychaet holes
1104			9-4	910		Crabs & holes
1106			9-5	935		SP 10 = SP 22
1108				961		SP 9
1110		4		972		SP 8
1110			9-6	982		Mound crabs
1111		5		989		Little craters
1111				996		Crabs
1113		6		010		SP 6 = SP 18
1114				021		Algae
1114		7	9-7	023		Starfish
1114			9-8	025		Outcrop
1115	28	1	9-9	034		
1115			9-10	035		Ripple marking
			9-11			
1116		3	9-12	042		Sled
1116			9-13	046		
			9-14			

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/18/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 9 Moving off line W + E 250' north of line 201 and
heading for line 100' south of line 201 (SP 7-0). (W + E)

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
					1055	
1117	28	3		13		
1118				end reel	13	Begin turn south
1121		4		14		Begin new reel
1124		5			116	B May be specific target
1126					150	Bottom appears varied w/light sand and maybe algal mat
		6				Much fewer polychaet holes. No crabs
1128		7		194		SP 0
1128				212		Tufts or patches of algae
1129	29	1	9-15	225		Fish, bottom rubble in areas
1129			9-16			
1129			9-17	236		SP 7
1131		3	9-17	270		Group of black holes
1131				275		SP 6
1132		4	9-18	290		Ripples
			9-19			
1132			9-20	298		Ripples
			9-21			
1134	30	2	9-22	324		New type
			thru			Rubble, whips, large sponges
			9-32			
1134		3		339		Fish
				350		Burrow
1135		4	9-33	357		Sponge & fish are less diverse again
				373		Less sand patches, still sandy
1136				380		SP 3

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/18/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington

Transect Location Area 9 End transect W → E 100' south of line 201 come about and head E → W over same general area. Did meander from 100' south of line 201 and back

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1138	30	4		14	416	Algae matlike area again
1143					500	little diversity
						Turn to come about &
						make 1 more run E to W
						along same line (inter-
						est in SP 3-6
1203					800	Cut engines,
						down. @ SP -3 ie 3 SP
1205					820	beginning of transect
1207	30	6			845	Sled on bottom momentarily
1209					876	Textured area w/some dark
1210		7			883	mat
1210					888	Depression off to right
1210					892	Check object
1211	31	1			900	Burrow
1211					900	Burrow
1213		2			921	Rivelets?
1213					925	SP 2
1214		3	9-34		932	Bottom trough
1214					932	SP 3
1215		4			945	Textured bottom
1215		5	9-35		952	Fish & burrow
			9-36		961	Debris & rubble & fish
					965	Angel fish & outcrops
1216		7			970	Another area algae &
1216	32	1	9-37		974	rubble
1217		3			980	Outcrop w/fish
1218	32	5		14	987	SP 5
					990	Area of black tufts
					1000	Ripples & tufts
					017	Ripples coarse
						material SP 6
1219		7				Ripples & sponge
						Dansel fish
						Area again flat w/algae
						cover Algal cover or mat
						not on ripples

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/18/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 9 E → W Transect between line 201 and line 100' S of
201 continued

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1222	33	2	9-38	14	030	Ripple mount & hole or overhang & fish ripples
1223		4			038	Overhang, group (outcrop) & small fish
1223					042	Ripples
1225		5		End reel	065	
				14		
				Begin reel	0	
				15		
1226		5				Area of algae (photo)
1227		6			034	Fish
1227					051	SP 3, crabs
					78	Turn off light
		7				50% overcast crabs en mass
1230					122	Camera out
1236-30						Stop engines
1240						Camera out
						Camera & sled on Tape and monitor off

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Barkaloo Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 7; Line 205; SP 10-25 and targets at SP 50

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
0950				4	795	Begin descent
1011				end 4		Camera off bottom, head to line 205
1013				start 5		Enrout to line 205
1028					364	On line headed East lower camera w/engines dead
1029					378	One engine on
1033					451	Bottom in site
1034					470	Between SP 61 & 62
1040-10					570	SP 59 Bottom came into view & fathometer shows rise. Bottom fairly barren
1042					596	
1044-30						SP 57
1045					660	Bottom in view because of lower camera
1047-30					680	SP 55
1049	7	1			≈695	Begin pictures
1051					730	*Gorgonans
1051		2			735	*Dark tufts
1052					744	*Burrow
1053			7-1		756	*Sponge
1053			7-2		762	*Sponge
		3			770	Lots of Bioturbation & wormtubes
1055						51 & 50 coming over low rise
1057	4					Pictures 238' depth
1058	5				821	
1100					846	
1100-20	6		7-3		848	*Big fish at outcrop
			7-4			
1101-30			7-5		865	Starfish
1102	7		7-6		875	*Branching coral, fans on outcrop

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 7; Line 205; SP 60-7

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1103	8	1	7-7	884		*Sea whip & fish outcrop
1105		2	7-8	705		*Area of algae (dark)
				906		Outcrop and clumps of rubble
1106				5	924	Dark tuft scattered; not many signs of life
1108		3			940	Fish
					951	Depression
					932	Rock
1109		4			954	Fish
					957	Branching coral, fnas?
					961	Fish (benthic)
					965	Growth
			7-9		969	Sponge in depression
			7-10		974	may be due to wave action
					979	Sea urchens?
						On bottom medium coarse sand
1112		6			986	Thin sand over coarse sand
					994	Branching corals or algae*
1113					001	Fish moved
					005	Dump of algae?
1114		7			015	SP 41 & 40
1115	9	1			025	SP 40 Very little on bottom; scattered dark clumps; Fathometer shows no relief SP 44-40
1117		3	7-11		45	Sea robin
1117-30				End tape		Fire still shots in between
				5		
1118-30		4			6	
1120-45		6			056	Slightly off bottom
			7-12			Fathometer shows slight rise. Not detectable on camera
1123	9	6	7-13		133	Question as to what tufts are. If they extend off bottom. Color?
1124-30		7			165	SP 35 Bring camera up slightly

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 7; Line 205 SP 60-7

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1126	10	1			260	See scattered branching coral or algae
1127		2	7-14		222	Sponge w/fish
1129			7-15		260	Branching (basket shape)
1129		3	7-16		284	" "
			7-17			See slight rise
			7-18			beginning at SP 32
			7-19			
1132		5	7-20		340	Sea urchin
1133					363	Area of little change or signs of life
1134-30		6			381	Urchin
1135					400	Raise camera slightly
1137		7	7-21		425	
1141	11	2			497	Bottom sedant shown
			7-22			Still appears medium to fine sand
1143-30		3			533	
1144						SP 25
1144-45			7-23		558	Clump off to right
1146		4	7-24		580	Fish scared off bottom
						SP 24 fathometer shows slight rise
1148-30		5	7-25		614	*Collection of branching organisms
1151		6			651	Holes closing
1155					708	Holes closing
1157		7			745	Rock or shell
			7-26			
1159					764	SP 16
1200	12	1	7-27	6	775	Diadema
1201					790	Look for lump to left
1202					805	Patch of algae & rish
1202		2			812	SP 15
1202			7-28			Scattered patchiness of algae. May be outcropping
			7-29			of hard bottom
1205		3			844	Polychaet holes
						SP 13

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 7; Line 205 SP 60-7

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1206					865	Shot of bottom sand
						Back to barren w/scattered tufts
1208		4			879	SP 12
1209					893	Burrow or depression?
1209-40					900	Scattered dark patches
1210-30		5			909	Fish
1211-30					920	Fish SP 10
1212-30		6			934	Raise continues slightly
1214			7-30		950	Patch of scattered tufts
			7-31			Increase holes & depression
						may give sense of coarse bottom
1216		7			983	Back in more Homogenous area
1217					989	SP 7
1218-40			7-32		005	Starfish
1219	13	1			011	Rock or shell
1220-30					23	Fish
					30	Bottom Homogenous, black spots close up
1221						SP 5
1221					36	Starfish? Scattered dark organisms? Might be sponges
1223	13	2	7-33	6	53 end	Fish
1224		3		7		
1225-30		4	7-34		25	Sponge
1225-30					26	Fish
1226					56	Hermit crab?
1226		5			60	Sponge?
					67	6 clusts of polychaete
					72	Fish
1227					85	Dark sponge
					105	Bottom homogenous Barren
1229		6			132	Fish
					137	No artificial light
						good visibility. Can hardly tell difference
1230					156	Sponge

UNDERWATER TELEVISION AND CAMERA LOG

TRANSPARENCIES		SLIDE	VIDEO TAPE		NOTES
TIME	PAGE	ROW	#	REEL COUNTER	
1230	13	6		7 156	SP 0
1230				170	Stop engines
					Camera coming up
1239					Camera out of water
1241					On board

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 6A; line 1 line 101 (W → E) approx 50 m S of SP 5 ie
between 5&6. Transect line w/pts 0-10 w/6 = 80 m W of line 101

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1509						Camera over side SP-3
1515				7	420	Camera decent tape on
1524	14	1			578	Bottom in site
1526					597	Fish
1526			6A-1		606	Fish
1527						Camera down, head to line
1533			6A-2		712	SP -4
1534					728	-3
1538			6A-3		775	Bottom in view SP-7 & 0
1539-40					794	Sea whip
1541			6A-4		817	SP 1
1542		2	6A-5		824	Depression
1543			6A-6			Bottom appears coarse
					833	Molusk
					834	Polychaete
					854	Bottom material not
1544						stirred by sled
						as much as this morning
						heavier, coarser
1545		3	6A-7		868	Gastropod
1546					874	Collection of tufts
1547					894	SP 5
1548		4			907	Patchy area of dark
						material
1549		5			910	SP 6 water may be
						turbid
1551-30					941	Area of dark patches
1552		6	6A-8		947	Rubble material
			6A-9			About 1 ft
			6A-10			
1553		7			957	Accumulation of rubble
1554	15	1		7	970	Large shell or part of
						coral
1555			6A-11		978	Outcropping of land
						substrate
1556		2			995	SP 9-10
1556			6A-12		003	Fish outcrop
1557			6A-13		009	Starfish
1558-30			6A-14		020	End of line
1559-30					034	Bottom slid shows coarse
						sediment flying up

UNDERWATER TELEVISION AND CAMERA LOG

Transect Location Area 6A Lines | to Line 101 50 m S of SP 5 (between 5 & 6)

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1601	15	13		065		End tape 7 Bring up camera off bottom
						Head to other E-W transect around SP 32
1605				8	000	Begin tape 8
						Camera in tow off bottom to second line of Area 6A

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1714	15	4	6A-15	0		Begin 9
1716			6A-16	9	48	Atop of coral
			6A-17			
			6A-18			
1716			6A-19	67		Star fish
1716						SP 5
1717		5		87		Area of thick growth
1717			6A-20	97		Irregular low relief
						large rubble
1717-30				119		SP 6
1719		6	6A-21	135		Outcrop w/fish, whips
						probably living coral
1720				164		SP 7
1721		7		190		Dark collection
						maybe algae
1722	16	1		206		Bottom less coarse
						more homogenous
1724				264		Bottom coarser? may be
						effect of looking down
1725		2		280		Urchin
1725-40				288		?
1726						SP 11
1728		3		342		Fish
1729						Both engines' Begin turn
						to brin us 180° turn and
						rerun transect E to W
						Speed took camera off
						bottom
1714		3		616		Bottom in view
1752		4		731		Just one engine
1754				750		Alcyonarium?
1755		5		763		Fish
			6A-22	765		Urchin

UNDERWATER TELEVISION AND CAMERA LOG

Transect Location Area 6A Line 1 to 101, \approx 50 m North of and parallel to
shot pt line 32 running E \rightarrow W

TRANSPARENCIES		SLIDE	VIDEO TAPE		NOTES
TIME	PAGE	ROW	#	REEL COUNTER	
1756	16	5		9 774	Rubble as filed hit
1756-40				787	SP 11
1758				803	Regular bottom; sparse
1800		6		830	Fish
1800				839	Fish
1801				846	Sea whip SP 8
1803		7		868	Sea urchin
1803				873	" "
1807				875	Depression
1807				877	Fish
1804				886	Chunks of rubble scatters through out
1805				893	SP 7
1805				901	
1806	17	1		910	Algae
1807				916	Outcrop of coral on limestone
1807				920	Sponge
1808		2		929	Fish
1809				938	SP 5
				941	Fish bottom less coarse again
1810		3		948	Larger chunks area of leafy
1810-40		4		958	More crowded distribution algae, chunks, etc.
1811		5		967	Branching
				970	Sponge & whips
				975	Holes all over
1812		7	6A-23	979	Outcrop
				980	

UNDERWATER TELEVISION AND CAMERA LOG

TRANSPARENCIES		SLIDE	VIDEO TAPE		NOTES
TIME	PAGE	ROW	#	REEL COUNTER	
2004				10 360	At Area 6B
					Camera in water; begin tape
2020	21	2			Begin maneuver to get camera line Bottom in site
2025					Fathometer shows bottom coming up to 270 ft
2035-					Fathometer shows two areas
2046					of relief 280-270-280-270
2050				026	Both engines out; lower camera start fires
2053					End tape 10
2054					SP-1, Bottom on screen
2054				11 000	Begin tape 11
2055				37	Mud or fine sand bottom
2056		2			w/bioturbation
				50	Fish
				54	Gorgonian
				61	Holes or depressions all over bottom
					Holes soft
2057		3	6B-1	75	Fish along side hole
2057				88	Barren bottom all along
2058				96	Gorgonian
2059		4		144	Sled into bottom, looks soft & fine
2100				159	Fish

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Barkaloo Project 41069
 Date 8/17/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 6A. Continuation of line 1 line 101; ~50 m North of
and parallel to shot point line 32 running E → W

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
			6A-24	9	983	Chunks rubble whips,
18-13-30	18	4	6A-25		992	SP 3
1815	19	2	6A-26		007	Flounder
						Bottom less rubble more
						sound but still sponges
						bottom cam up w/coral
						rubble now dropping off
1816		5			019	Scattered sponges
					0	Rubble & tufts
					024	Holes
1817		7			028	Fish
1817					032	SP 1; fish, sponge
1819	20	1			61	End tape 9
1820		2	6A-27			Begin tape 10
1823					90	Camera off bottom
1833					318	Camera out of water
1835					360	Camera & sled on deck
						head for Area 6B

Greates outcrops between 7 & 5
 Especially between 3 & 2
 Fathometer showed rise & then quite
 steep drop off 225 to 240

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2102				11	201	Fish
2103					229	Sponge
2103	21	5	6B-2		233	SP 3
			6B-3		235	Hermit crab?
2104					257	Big hole
2105		6			266	Crab
2105		7	6B-4		278	Fish
2106					293	Burrow (big)
						sled in bottom
2107					312	Winch blew fuse
						sled in bottom; increase
						speed to get off bottom
2107-40					328	SP 5 Out engines
2109	22	1	6B-5		368	Lots of burrow hills & accumulations of sediment
2111		2			399	Fish
2112			6B-6		410	SP 7
2116		3	6B-7		492	SP 9 out of area
			6B-8			
2119		4	6B-9		532	Squid, sea robin
2121						Prepcotting, complete to turn 180° and come down
						SP 25 W to E
2136		Along SP 25 W → E				Begun fixes, on SP line
					25	
2139					830	Bottom in site
2140		5			838	Fish
						Depth ≈ 275'
2143		6			878	SP-1 Barren muddy or fine sand, holes

UNDERWATER TELEVISION AND CAMERA LOG

TRANSPARENCIES			SLIDE	VIDEO TAPE	NOTES
TIME	PAGE	ROW	#	REEL COUNTER	
2144	22	7		11 888	Along SP 25
2146	23	1	6B-10	918	Lines of bioturbation
2148		2	6B-11	936	SP 6
2149				954	Burrow
2150		3		963	Animal jump off bottom
			6B-12		Stop fixes off course
2158				63	Coming about 180° to run E to W
2159	5			End 11	along SP line 25
2200				Begin 12	
2216				382	
2217-40		E → W		409	Fish
				417	Sled shows soft fine sediment
2219		6		429	eel?
2219-30				435	SP 0
					Seem to be eels on bottom
2220		7		455	fish, eel
2221				472	Burrow
2221-30				478	SP 1 crabs
2222	24			488	Fish
2223		2		498	Eel on bottom?
2224				515	Eel swim off bottom
2225		3		539	Sea Whip?
2225		4		545	SP 3
2227		5		571	Whip?

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE	VIDEO TAPE		NOTES
	PAGE	ROW	#	REEL COUNTER		
			E → W			
2228				2	582	Long SP 25 SP 4
2227-30					591	Mound
2228-45					595	Burrow
2229					606	Crawling on bottom
2230	24	6			625	Fish
2231		7			641	SP 6
2233					665	SP 7
2234	25	1			678	Mound - could be what showed up on side scan. Not a burrow
2237		4			722	Fish along bottom
2238		5	6B-13		731	Mound & hole mound est. up to 3 ft. across
			6B-14			1 ft. high. Most 6" to 1 ft.
2239		6			752	SP 10
2239					757	Hole
2240		7			772	Starfish
2241			6B-15		778	Fish, sea robin
2242	26	1	6B-16		785	Fish & crabs?
2243			6B-17		802	Eel may be algae just before it
			6B-18			Camera off bottom
2243						Camera coming up
2244				819		Engines killed
2245						Camera up on deck
2258						Head to Area 7 for lane count

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4, line 114; line 1/2 between SP lines 21 & 22 and 1
to line 114. SP 4 = line 114. SP 3 = West side of side scan. Time is EDT

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1231				15	365	Start recorder Are west of line 114
1237	34	1			468	Camera off side Lite on
1249					667	Bottom in view Soft, bare bottom
					737	Sea whips
1252						Fix for camera deployment
1301					831	Maneuver to beginning of transect
				End	15 1075	
1322				New tape	16 0	SP-3
1326					118	-1
1327		2			136	Bottom
1331		4			228	SP 1
1332		5			254	Sea whips
1332					262	Fish & sea whips
1333-30		6			281	SP 2
1334					289	burrows, whip & fish
1334					298	fish
1335	35	1			303	sled
1336			4-1		324	SP 3
			thru			
			4-6			
1337		3	4-7		348	Outcrop
			thru			
			4-9			
1338					364	Big Pinnacle
					366	Lot of fish; coarser sand
1339		4			393	finer sediment - holes
1340					412	SP 5
1342					441	Leaving bottom
1344-30					489	SP 7
1348						End transect turn about
1407		5			831	porpoise

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 114 On Line 32 W → E

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1411	36	1-3		16	881	Porpoises & baby
						Still enroute to 2nd transect area
1427				End 16	1068	
1428			New tape	17	0	
1433-30					145	SP-2
1434-30					165	Holes (bioturbation)
1435					195	Algae tuft
1435					199	SP-1
		3				Slow rise in bottom
1437					237	mud depression
						ski
1438		4			248	SP 0
1438					254	Holes in cluster
1438			4-10		258	
1438					262	Organisms
					270	Sea whips
1440		5			291	Urchin
1440					295	SP 1
1441					317	Whips 5/m ²
1441					321	Hole
					327	Check texture
1442		6	4-11		338	Starfish
1442					346	SP 2
1443		7	4-12		359	Rise begins
1444			4-13		375	Rubble area
			4-14		387	SP 3
1445			4-15		392	Pinnacle, hard
					396	Pinnacle gouge
1445			4-16		400	Pinnacle cut engine
1446	37	1			418	Sled off bottom, bent
1448					455	Camera coming up, drift
						TV light out
1459					640	Camera out of water
1509					785	On board, recorder off
1510						Fix
1523						Under way to line 108
1625						Arrive line 108

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 108 Transect line 60 m W of line 108 Run
 N → S SP 59-90

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE REEL COUNTER	NOTES
	PAGE	ROW			
1651				785	Camera over side Recorder on
1656					Deployment Fix 1134 92 1928 67
1712				1037	Maneuvering to start of transect
1715			End tape	1065	
			17		
1718			18	0	
1741				520	Arrive on line, cut engine lower camera
1743				539	bottom
1743				547	SP 56
1745				577	Depressions & small holes Bare, turbid
1745				583	SP 57 274'
1746				594	Sand S
1746				600	Sand S
1747	38	1		619	SP 58
1748				631	Fish
1749		2		640	Fish, Depressions 1 ft in diameter small hills 6" high
1749-45				645	SP 59
1750				662	Humrock appearance
1751-30				675	Skid soft fine bottom
1752-15				683	SP 60
1753		3		697	Very few signs of life
1753-15				704	Sand S
1754				714	Fish
1754-30				718	SP 61
1755			4-17	725	Sand S
1756		4		732	Urchin
1756-45				749	SP 62 Still turbid
1758			4-18	767	Fish
1759		6		778	Fish SP 63
1759				783	Fish

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 60 m W of Line 108 Run N + S SPs 56-90

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1759	38	6		18	788	Fish
1759					792	Sand \$
1801					805	Fish SP 64
1801		7			812	Fish
1801			4-19		814	Starfish
1802					818	Hermit crab
1802					830	Sand \$
1803-30					838	SP 65 Depth 280'
1804					853	Sand \$ Still fine sand
						looks soft Depression
						mounds all over
1805-30					866	SP 66
						1-2 sand \$ every 100'
1807					885	Sled hit
1808	39	1			895	SP 67
1810		2			922	SP 68
1810-30					925	Fish
1811					937	Sled in sed.
1812					945	Sand \$
1812-15					949	SP 69
1814					975	SP 70
1815		3			978	Sand \$
1816-50					1000	SP 71 humrocky bottom
1817		4			005	Fish
1817-45					011	Fish & rubble
1819			4-20		025	Fish & SP 72
1819					031	Hermit
1820		5			037	Fish
1820					043	Fish & sand \$
1821					051	SP 73
1822		6		End tape	065	

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UNDERWATER TELEVISION AND CAMERA LOG

Client BIM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 60 m W of line 108 Running N → S SP 50-90

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1823	39	6	Begin tape	0		1 Organism/10 m ²
				19		
1823				10		SP 74
1825				77		SP 75 ≈285'
1827				112		Flounder
1828		7		135		SP 76
1830				190		SP 77
1830				200		
1831				225		
1832	40	1		244		SP 78
1834			4-21	279		Fish
1834-50				293		SP 79
1835-30				304		Burrow w/ fish
1837				342		SP 80 290
1838		3		362		Depressions
						Small pok marks, are larger & becoming more numerous
1839-30				383		Fish SP 81
1839				391		Bottom rough. Check off to left
1841		4		426		SP 82
1841				430		Linear depression
1842				441		Large holes or depression
1843		5		446		Large hole
				456		Tuft?
1843-45				466		SP 83
1846		6		505		SP 84
1847				525		Whip
1847				530		Tuft
1847-45				534		Hole
1848		7		540		SP 85
				563		Another area of increase

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4, Line 60 m W of Line 108 Running N → S SP 50-90

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1849-45				19	567	Fish
	41	1	4-22		544	Hole w/something
1850-30					578	SP 86
1852					597	Numerous projections of sediment
1852-30					613	SP 87
1853		2			619	3 holes
1854					627	Shiny fish,
1854			4-23		637	Outcrop, see bottom
1854		3			643	SP 88
1856-30					669	SP 89
1857		4	4-24		679	Coarse sed.
			4-25		684	Outcrop angel fish
1858-30		6			700	SP 90
					703	Outcrop small
1859		7	4-27		709	Alcyonoim rubble & coarse sand
1859	42	1			714	Coarse sand
1900					718	Bushes, fish & rubble
					728	Bushes, whips
1900		2			730	SP 91 300'
1901		3	4-28		737	Bushes & outcrop
1902		5			748	Fish
1902					751	Bush
1902					754	Outcrop w/algae
						Bottom coming up
1903					764	SP 92
1903-30		6			767	Outcrop
					779	Finer sand, pok holes, slight depressions
1905-15					794	SP 92
1906					805	Camera coming up
1908						SP 94

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Smith Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 60 m E of line 104 SP 75-90 Run N → S

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1916				19	945	Light off
1920					987	Camera break surface
1923					1015	Camera on deck
2053					1018	Camera our side
2057-30			End 19	1067		monitor & recorder on Ship in Area 4, Line 104 engines dead
2100			Start 20		0	Fix
2104					113	
2110						Moving onto line
2123						On line
2123					526	SP 69
2125-45					560	SP 70
2127	43	1			580	Whip
2127-45					589	SP 71 Bottom is fine sediment. Signs of bioturbation
2128					504	Sled on bottom. Small holes & depressions small 6" mounds to give hummocky
2129					618	SP 72
2130-30					628	Sea wip
2130					632	Sand S ≈ 260'
2111					648	SP 73
2132		2			653	Worm holes Very few visible life forms
			4-29		673	Eel
			4-30			
2133-30					676	SP 74
2134		3	4-31		683	Eel

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4 Line 60 m E of line 104 SP 75-90 N → S

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2135				20	701	Eel
2135	43	4	4-32		706	SP 75
2137			4-33			Continued hummocky
			4-34			bottom, ie shallow
						depressed
2137					734	SP 76
2139		5			762	SP 77
2140					774	Eel
2140-50					781	Eel straight down
2140-15		6			789	SP 78
2143					816	SP 79
2143					821	Sea whip
2144	44	1			537	Sea whip & crabs
2145		2			842	SP 80
2146		3			860	Object
2147		4			868	SP 81
2147					875	Crab
2147					877	Eel-probably nite
						phenomenon
2149					892	SP 82, Whip, object off
						to left
						fine sand hard bottom
2150					912	Sled on bottom
2151		5			919	SP 83
2151-20			4-35		921	Fish & crab
2151-30		6	4-36		924	Crabs, sand \$
2152-20			4-37		933	Fishes & eels & crabs
2153					942	SP 84
2153					946	? off to right
2154		7			957	Still fine sand little
						mounds 6 x 2" small
						holes & depressions
2155	45	1			968	SP 85

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/22/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 4; Line 60 m E of line 104 SP 75-90 N → S

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2156	45	1		20	976	Sand \$
2157					991	SP 86
2157-50					001	Sea whip
2158-20					006	Tuft & fish
2159		2			015	SP 87
2201					040	SP 88
2202			end reel 20	080		lobster
2203		3	Begin reel 20	0		SP 89
2204-50		4		20		Fish
2205		5			061	SP 90
2205-70					070	Off to left
2206					086	Sand \$
2207		6			117	SP 91
2208-10					140	Crab
2209-00		7			140	SP 92
2211						Camera off bottom
2214-30						SP 93
2228					561	Engines cut
						Recorder off sled on
						deck
				frame		count 105

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Smith Date 8/25/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 3, Line \approx 90 m N of Line 205, W \rightarrow S SP 34-32

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
				21	561	
0901					562	Camera in water
0916						Fix
0920					\approx 848	Bottom in view
0924	46	1			\approx 890	Shots of bottom maneuvering into wind
0928					942	" " "
0933					003	into wind, slower speed
2937		2			048	Bottom in view
					075	At lead out
0939		3	3-1			Line, still testing drift
0940		4	End 21		087	
0942		5	Start 22		000	
0943-45		6			052	Sled on bottom sed soft fine 6" diameter depressions
0946					122	Camera coming off bottom
1007-30					561	Sled on deck for compressor plate
1055					564	Tape on camera in water, drifting onto target
1101					640	Light on Camera lowering
1103					669	345'
1104					681	Fix
1107					725	Lowering
1110					767	"
1113					809	"

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1215	50		3-11	23	829	Starfish
1222			3-11		926	
1223		6			940	Camera off bottom
1227					978	Camera to high clam (250' cable)
1230						Head NE to Line 101
1244			End	23	192	SP 67
1302			Begin	24	0	Manuvering to NW line Camera in tow (250' cable) Bottom depth 385' Stop to pull sled out Sled on board
1310						
1324					479	fix; continue to NW
1325						transect, tape off

UNDERWATER TELEVISION AND CAMERA LOG

Transect Location Area 3, Drift NS - SW $\approx 210^0$ over line 205 between SP 32-34

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
				23	385	Algae w/growth
1149	48	5			388	Drifting again
1150					406	
1150-35		6			411	Holes
1151					426	Crab
1151-35					438	Crab
1152		7			447	
1152-50	49	1			463	Fish in burrow
1153					467	
1153-30			3-9		474	Fish in burrow
1155-30		2			514	Fish " "
					518	Hole
1156-50					536	? organism
1159					579	Continued hummocky very few organisms fine sand
1200-45		3			607	Starfish
1200-55					160	Fish
1201-45					624	Sled hitting bottom
1202-45					641	Large hole & mound
1203-15		5			649	Whip
					650	crab
1205	Actual interest pt				677	Starfish
1207					708	360'
1207-5		7	3-10		713	Pour of fish and mounds
1207-45					720	Whip
1207-45	50	1			721	Big mound
1209-10					743	Bottle?
1210-15					762	Big hole to right
1210-35					766	Big hole to left
1211		2			771	Whip
1211-30		2			780	Mound 10-12"

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UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Smith Date 8/25/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 3, Drift NE \rightarrow SW \approx 210 $^{\circ}$ over line 205 between SP 32-34

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1115				22	837	Lowering camera
1120	46	7			902	" "
1120-30					908	Bottom in view
					912	Soft hummocky bottom, fine sediment, little holes, 6" - 12" depressions
						visibility 3-5"
1122	47	1			927	
1122-30			3-2		933	Fish stays in hole
			3-3			
1125-30					968	Fish in burrow, 12"
1127		2			987	Large hole
1129			3-4		1014	Fish in hole
			3-5			
1130		3			1025	Fix
1130-50		4			1035	Fish in hole
1134					1073	Cloud of sed from sled
			3-6		1079	Starfish
1135		5	End 22		1092	
			3-7			
1137-45		6	Begin	23	92	
1139					136	
1139-30		7			148	Crab
						Bottom shell hummocky w/ depressions & mounds
1139-45	48	1			162	Starfish
1142					221	
1142-15					223	Fish
1143-15		2			250	Whip some mounds w/holes others w/out
1145-35		3	3-8		307	Fish
1147		4			340	Depression w/shell
1148					361	Whip

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UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Smith Date 8/25/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 3; Line 50 N and across S.P. 66 of line 103, W → E

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1424				24		Arrive site
1432				479		Camera over side
1434						fix
1434						Cable out of shive, stock
1450						okay, lower
1452						out of shive again
						change shiv
1514				60		On board
1514			End 24			Parplotting course
1530						Underway for line 103
						SP 66
1630						Arrive, camera over
1631						fix
1631			Begin 25			Tape on, light
1634				090		Camera lowering
1654	50	7		512		Bottom in view
1656				549		Begin maneuvering
1736			End	25	1089	Maneuvering
1740	51	1	Begin 26	0		lose station signal
1743				84		Bottom
1744-30		2	3-12	126		Craters - mound about 6"
1745				146		Mound or outcrop
1746		3		177		Whip, soft sand, fine
						3-5' visibility
1749		4		231		sled shows hermit
1751				297		Hidden burrow
1752				306		Whip
1752-30						hermit crab

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
Date 8/25/78
Supervisor Bennington

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1753				26	336	355' depth
1756		5			378	Fish in burrow
						Δ to starbord engine
1756-50			3-13		398	Mound
1759		6			444	Whip
1800					472	Fish
1801		7			484	Whip
1802-30		1			499	Whip
1803-45			3-14		520	Mounds & hole
1804-30					535	Fish
1805		2	3-15		543	Lots of 6" craters
1807-10		3			579	Big holes
1809					592	Hummocky appearance
		4				
1811					642	Camera off bottom
1828						Camera on board
					887	Tape off

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/25/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 3 W → E Parallel and ½ way between shot lines 37 & 38
across line 108

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2054				26	887	Light on, recorder on
2056						Camera in water
					913	Fix
2059					950	Lowering
2103					1000	" 230' water
2109						Begin maneuvering
2110-40				End 26	88	
2112				Begin 27	0	Maneuvering
2117					137	234'
2123					281	Maneuvering
2132					460	
2146					687	Slowing
2147					704	SP-3 245'
2150					746	Lowering
2151-45					767	Bottom
2152	53	1			775	Sled hit bottom
						Coarse sand, harder
2153			3-16		786	Squid & Ink
					794	Eel swims to camera
2154			3-17		802	Crinoid
2154-45		2	3-18		808	SP 1
2156			3-19		832	Hit pinnacle
			thru			
			3-24			
2157		4	3-25		848	Higher pinnacle SP 3
2159					872	Lowering again
2200		5	3-26		882	Algae?
2201		6			894	
2201-30					900	Coarse sand, sled
2204			3-27		934	Rise?

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
Date 8/25/78
Work Area Eastern Gulf of Mexico Supervisor Bennington
Transect Location Area 3 W → E parrallel & ½ way between SP 37-38 accross line
108

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2206				27	956	Reef
2207	53	7			969	Begin move to
			3-28			line 106
			3-29			Bring camera off bottom
2209			3-30		993	Moving north
2211					1018	" "
2214					052	Speed tape to Δ
2215			End	27	1092	

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE	NOTES
	PAGE	ROW		REEL COUNTER	
2216-30	55	1		Begin 28 0	
2218			3-31	51	Rise or outcrop
2218-20		3		59	Outcrop
2219		4	3-32	80	
			3-33	100	
2220				103	Rise
				115	Off bottom
2222				160	Δ course to run so cable off to Fathometer not in sync w/TV camera
2223		5		185	Outcrop below
				215	Fathometer shows rise (fix)
2224-30					Bring up = Area of Interest
2226					Depth 255 ft
2228				258	to 075 ^h
				300	Current is very strong was difficult maintaining W → E. That is what is pulling our sled off to side.
2229				320	Running at 2 engines
2229-45				335	60 to 050 ^h
2230-45				345	Cut both engines
2232				378	Camera coming up
2242				563	Lite out
2243				575	Video tape off
					Camera on board Head to platform

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Work Area Eastern Gulf of Mexico Date 8/26/78
 Supervisor Bennington
 Transect Location Area 3; Line 112, SP 97-100

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE REEL COUNTER	NOTES
	PAGE	ROW			
0905				28	Camera over side
0907				579	Tape on, lowering camera
0916				740	Lowering dub info
0922				788	Begin maneuvering to start
0927				853	~ area of pinnacles
0933					At area
0935				1000	Slowing
0943				1052	Speed tape to end to A
			End	28	
0945			Begin	29	Heading to begin draft
0947				75	Camera of 250' enroute to start. Pinnacles on fathometer
0958				332	Trying to stop at southern end of transit 365'
1000				395	Cut engines, drifting. Camera ~ 250' bottom 365' waiting for fathometer to indicate pinnacle area
1004				440	Minute fixes
1008					Camera down to 300'
1013	56	1		594	Drifting
1017				660	Going down a bit Bottom 355'
1020		2		700	Bottom
1020-50		3		712	Coarse sand
1021		4		718	Hole w/ white thing
1021-30				724	Sed. kicked up
1022-30				737	Coming off bottom, expecting pinnacles to be coming up

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/26/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 3; Line 112, SP 97-100

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL COUNTER		
1024				29	759	Camera @ 320'
1025	56	5				347'
			3-34			Pinnacle on fathometer
1026			3-35	789		Pinnacle below left of
			3-36			10' camera line
			3-37			
1027-45				795		Pinnacle peak in site
1028		6	3-38	802		Whips
			thru			
1027-50		4 & 5	3-52	813		Amberjacks
1030				842		Visibility limited, camera
						≈ 315' bottom 365'
1037				931		
1039				936		Camera coming up
1040						last fix
1047				052		Light off
1054			End	29	1098	Camera on board
1105						Head platform

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Project 41069
 Client BLM Rep Smith Date 8/26/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 2; Line 101, SP 67 Run W → E

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1500				30	0	Camera over, light on
1516					258	Camera at bottom
1518					300	Maneuvering to start
1524					417	" "
1532					541	" "
1537-15					635	Slow down, lower sled
1537-50					647	SP-3
1540	58	2				
1541		3			695	SP 0 bottom
1541-45					700	Sled on bottom
1542-10		4			707	
			2-1			Visibility 5-6 ft.
1543		5	2-2		721	
1544		6			736	
1544-30					742	Sand dollar fine sand, slight bioturbation
1545-10		7			750	
1547		1	2-3		778	Flounder
1548		3			788	Fish in burrow Bottom = 240' flat
1549		4			804	
1549-40					810	Tufts
1550			2-4		821	Shell fragments
					833	Depression w/crustacion
1551-40		5			836	Hole. Black tufts or blades common 3/m ²
1552-50		6			835	Sand \$
1553					865	SP 3, fish, depression
1554		7			869	
					877	Sand \$ 1/10 ft.
1555		1			880	

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Date 8/26/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 2; Line 101 SP 67 Run W → E

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1555-25				30	884	2' diameter hole
1555-50					892	Whip
1552	60	2			893	
1557-20					909	Gorgonian?
1557-45					910	SP 5
1558		3			918	Sand \$
1559					931	
1559-45		4			940	Whip
1600-15		5			944	Fish
1601		6			954	White coral in depression?
1601-50		7			964	1 ft. diameter hole 6" deep
1603	61	1			929	
1604-10		2	2-5		990	Rise (outcrop)
			2-6			
1604-45		3	2-7		997	" "
			2-8			
1606		5			1014	
1607					1025	Off bottom
1610-50			End 30		1066	
1614			Begin 31		0	Camera coming up
1617					096	Camera out of water
1618					112	On board
						Head N to line 52

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UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Work Area Eastern Gulf of Mexico Date 8/26/78
 Transect Location Area 2; Line 101 SP line 52 E + W Supervisor Bennington

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1707				31	112	Camera over, fix Start recorder
1722						Camera @ 200', begin maneuvering, 2 engines
1733					618	
1742					750	
1745					799	Lowering camera to bottom
1748	62	1			829	235'
1748						Begin 1 min fixes
1748-30						See bottom
1749-45					845	Short whips, or pens
1750		2			854	Sled in sed.
						visibility 5'-6'
1751-30	63	1			874	Sand S
						Sand fine to med.
		2				Occasional 6" depression
						Small holes 2' 40/m ²
1753-45		3			901	?
1754					906	
1754-30					912	1ft depression, coarser
1755					917	Fish
1756					931	Very poor visibility
1757		5			944	
1757-30					950	Lift camera off a bit
1759		6			967	Lowered a bit, cannot see skid even
1759		7	2-9		974	2 squids
1800-30	64	1			985	SP 4, visibility better
1802-10		3			054	Hit bottom
1803			2-10		"	Starfish SP 3
1804		5	2-11		026	Gentle rise, no difference

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Work Area Eastern Gulf of Mexico Date 8/26/78
 Supervisor Bennington
 Transect Location Area 2; Line 101 SP line 52 E → W

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
1804-30					32	Hit bottom, coarser sed.
1805	64	6			40	Flounder
1805-50					45	Passed SP 2
1806-30		7			53	Groove in sed
1807	65	2			59	
1807-30					64	SP 1
		3		END 31	70	
1809		4		BEGIN 32	0	
1810-20		5			44	Fish
1811		7	2-12		60	Outcrop 236-238
1812	66	4	2-13		91	Sled hit bottom
1813		5			119	Still gradual rise
			2-14			in bottom; anemone
1814		6			150	SP-2
1816	67	1			194	
1816-30					208	Off bottom, Tow boat cutting across our bow
1825						Bring sled up
1834					556	Camera on deck
						Tape off
18738						Buoy out; head for line 102, SP 10
						Too much shooting w/no guide, skip SP 31 line 101 & use xerox side scan of Line 102, SP 10

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BLM Rep Smith Project 41069
 Work Area Eastern Gulf of Mexico Date 8/26/78
 Supervisor Bennington
 Transect Location Area 2, Line 102, SP 10 W + E

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNT	
1912				32	560	Camera over,
1923					708	tape on, light on
1931					818	Begin Maneuver to start of line
						Arrive; lower camera to bottom
1932	68	2			830	See bottom
			2-15			Starfish
1932		3			839	Fish
1935		5			871	
1937	69	1			897	SP 1 sled
1938		2			915	
1939		3	2-16		920	Soft, fine-coarse sed
1940		5			934	
1943		7	2-17		968	Hit bottom SP 3
1945	70	2	2-18		992	Depth 180'
1945					995	Ash
1945					008	Fish
1947-30					020	Shell
1948		4			028	
1950		6			050	Fish
1950			2-19		067	Whip
1951	71	1	2-20	END 32	070	
			2-21			
1953		6	BEGIN	33	000	
1955			2-22		045	Off
1958	72	1			145	Camera unit secured at 150' of cable (1st hose clamp)
2008					350	Dub planned transect

UNDERWATER TELEVISION AND CAMERA LOG

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE	NOTES
	PAGE	ROW		REEL COUNTER	
				33	Note: Fathometer shows rolling hills 7-10' off bottom. Difficult to tell from TV tape because poor visibility. Had to move camera up & down to stop on bottom. Side scan shows area of depression, quite wide, in area. Could be what we saw. May be due to current scouring. Plan to run S → N 60 m E of line 102 to pick up anomalies
2012				437	Moving south to get on line

WOODWARD-CLYDE CONSULTANTS

UNDERWATER TELEVISION AND CAMERA LOG

Client BIM Rep Smith Project 41069
 Date 8/26/78
 Work Area Eastern Gulf of Mexico Supervisor Bennington
 Transect Location Area 2; Line 102 Across SP 11-9

TIME	TRANSPARENCIES		SLIDE #	VIDEO TAPE		NOTES
	PAGE	ROW		REEL	COUNTER	
2023	72			33	613	Headed N
2024		2	2-23			Lower camera to bottom
					630	Begin, fixes
2024					638	Bottom in view
2027		5			680	SP 0, Sled shot
2027-50					685	Swimming affloat
2028-30		7			694	Shell fragments
2028-45					699	Fish
2029	73	1			702	Starfish
2029-50					714	Whiteshell?
2030		2			718	
2030-40						SP 1, cut engines
						drift
2031					742	
					744	Small school
2032		4	2-24		753	Skid in sed.; fish
2033		6	2-25		761	
2033-30		7			764	Fishes
2034	74	1			772	Hit bottom, seems hard
						coarse
					775	Flounder
2035			2-26		780	
2035-45		2			796	SP 9
						Visibility 5-6 ft
2038					828	
2039		3			864	Fish over bottom, SP 8
			2-27		892	Fish, bottom going down
			2-28:		914	Coming up lot of fish
			2-29			in depression
			2-30			
						Wide depression

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